

From the British Quarterly Review.

1. *Chemistry, Meteorology, and the Function of Digestion, considered with Reference to Natural Theology.* By WILLIAM PROUT, M. D., F. R. S., Fellow of the Royal College of Physicians. Third Edition. London, 1845.
2. *Actonian Prize Essay. Chemistry as exemplifying the Wisdom and Beneficence of God.* By GEORGE FOWNES, Ph. D., Professor of Practical Chemistry, University College, London. London: John Churchill. 1844.

THE recent appearance of a new edition of Dr. Prout's "Bridgewater Treatise," and the publication, not long before, of the "Actonian Prize Essay," induce us to think that the present is not an unsuitable occasion for showing that chemistry is not behind the other physical sciences in rendering service to natural theology. It is not likely that for some time we shall see a new discussion of chemistry in this relation, nor shall we readily find more accomplished chemists than the authors of the works placed at the head of our article. Dr. Prout is one of the most distinguished of our senior chemists, and Professor Fownes one of the ablest of the juniors. The former furnishes the results of the investigations and meditations of years; the latter, himself an original observer, brings to the discussion an accurate acquaintance with the most recent discoveries. Both are able writers, but their works are much more valuable as treatises on chemistry, than as discussions of its bearing on theology. On this we shall have somewhat more to say, further on, but meanwhile we propose, without subjecting these works to detailed criticism, to endeavor to give our readers some conception of the way in which chemistry assists, as well as perplexes, natural theology.

An argument of a twofold kind is deducible from chemistry, in proof of the existence of a great Designer and an Omniscient Chemist. In its one aspect, it considers matter as displaying the characters of what, for want of a more dignified and equally appropriate term, we must call a "manufactured article." In this respect, it seeks to show, that the properties of chemical substances are regulated by laws most uniform, most simple, and harmonious; and proceeds thereafter to infer that there must have been an Author of all this uniformity, simplicity, and harmony; and that these are reflections of similar attributes of his own being. The scope of this argument excludes entirely from notice any relation which may subsist between the properties of chemical substances and the welfare of living beings whose bodies are fashioned out of them, and whose life may be compatible only with the properties which are found to exist. It professes, from a consideration of the qualities of matter, apart from all uses to

which that matter may be put, to show that it owes its existence and attributes to the will of a Great Creator, and that it proves him to be "excellent in counsel, and wonderful in working." Into this, which is the more limited and more difficult part of the chemical argument for a God, we do not propose, on this occasion, to enter. It would require an amount of space in the mere enunciation of the purely physical facts, on which the theological argument should afterwards be founded, such as we cannot at present command. Nor could the discussion be easily made to run so, that the great mass of our readers should follow it with pleasure, and leave it with profit. We shall not, accordingly, pursue it at all.

The other and more familiar form of the argument from chemistry for the existence of a Creator, is that which considers this science not as complete in itself for that purpose, or as sufficient when taken alone, to supply proof that there is a God; but as acquiring significance for that end only when taken in connection with the living beings (plants, animals, and men) which are indebted to it for the elements of their frames, and beholden to it for the maintenance of those functions, the arrestment of which brings life at once to a close.

The atmosphere, for example, which we shall select as the text whereon to discuss the limits and kind of assistance which chemistry lends to natural theology, is a mixture of oxygen, nitrogen, carbonic acid, water-vapor, and ammonia, which, considered in itself, would not be looked upon by most persons as good or bad, as directly supplying evidence of the absence or the presence of design. But when we consider it in connection with the fact, that every living being on the dry land is bathed in it, and lives on it, and by it, and that those that are in the sea drink it in, dissolved in the element in which they live, then certain conclusions force themselves upon us, concerning the cause why it proves so exactly suited to the necessities of all the animated beings for whom it is the breath of life.

With a view to put the question before us in the clearest light, we shall suppose that it had pleased God, after creating and fashioning this globe, and fitting it for the residence of living beings, to have himself abstained from adding to it an atmosphere, but, as a mark of favor, to have commissioned one of his angels to do so. Let this angel be further supposed to have been a most accomplished anatomist, botanist, physiologist, and chemist, and to have had the chemical elements and their compounds entirely at his command, so as to have been free to make any use of them he pleased.

To our angel philosopher the following task is

assigned:—To furnish an atmosphere fitted to maintain in full vigor the life and health both of plants and animals. This atmosphere must, further, be of such a nature that neither class of living beings shall impair its suitability for the other, but, contrariwise, shall be a powerful means of preserving it in a salubrious state for the opposite class: the plant constantly adding to it food for the animal, the animal constantly supplying food for the plant. Moreover, it must be as nearly as possible quite uniform in composition, and as pure in one direction as in another, and must contain within itself a power of self-purification, so as to be able to remove or destroy all substances injurious to animal or vegetable life, which may find their way into it. This much settled, our angel proceeds to work in the selection of ingredients for an atmosphere. In the first place, he is aware that neither plants nor animals can live or grow for any length of time in darkness, but must be exposed (speaking generally) for at least some twelve out of every twenty-four hours to the influence of light. No dark-colored gas, then, which would absorb and extinguish the sun's rays in their passage towards the earth, can be admissible as a permanent constituent of the air. The ruddy-brown nitrous acid and bromine, accordingly, the purple-vapored iodine, and yellowish green chlorine, are all, on account of their color, even if not otherwise objectionable, quite out of the question.

In the second place, the gas must be tasteless and inodorous; for neither plants nor animals can exist, unless for a short period, in any of the odorous or rapid gases. Chlorine, bromine, iodine, and nitrous acid are on this account again excluded; and so are all the gases, simple and compound, excepting oxygen, nitrogen, hydrogen, and perhaps some of the compounds of carbon and hydrogen.

In the third place, the gas or gases of the atmosphere must possess a considerable solubility in water and saline aqueous solutions, for they must be able to become liquid in the blood to produce certain changes there; and to dissolve in lakes, rivers, and the sea, so as to maintain the respiration of the animals living in them. On the ground, then, of their sparing solubility, nitrogen, hydrogen, and carbonic oxide must be excluded. On the other hand, the solubility must not be very great, otherwise the blood will be supersaturated, and prove too exciting, and the bodies of water on the surface of the earth will dissolve too much, and thereby come to be hurtful to their inhabitants, whilst they rob the atmosphere of too large a portion of its vital ingredients. On this account, then, as well as on others, chlorine, bromine, nitrous acid, carbonic acid, and nitrous oxide must all be excluded.

In the fourth place, (not to enumerate at too great length the qualities desirable in a respirable elastic fluid,) the gas or gases to be breathed by animals must be able to unite with carbon and hydrogen, and to evolve heat in so doing, otherwise,

although the other conditions of life were present, the animal would perish from cold.

Upon reflection, it would soon be apparent to our angelic chemist, that of all the gases, simple or compound, there was but one that possessed the necessary properties—namely, oxygen. The other gases, moreover, would be excluded by him, not because they were deficient in single serviceable qualities, but because each one of them was, on several grounds, quite inadmissible.

Thus, chlorine, bromine, iodine, and nitrous acid possess color, odor, taste; are too soluble in water; cannot combine with carbon, and, in addition, are deadly poisons. Carbonic acid and sulphuretted hydrogen, with the exception of color, have all the noxious qualities of those gases also. Hydrogen, the carburetted hydrogens, and carbonic oxide, are too sparingly soluble, and cannot unite with carbon and hydrogen; carbonic oxide, moreover, is a poison, and all have the serious objection of being combustible in oxygen. Of all the gases, there is but one that can for a moment be compared with oxygen—viz., nitrous oxide, or laughing gas. It has the objection, however, of having both an odor and a taste, and of being exceedingly soluble in water and in saline solutions. But what is worst of all, though it may be respired for a short time, not only without inconvenience, but even with pleasure, its continued inspiration occasions violent excitement, and ultimately death.

It appears, then, that oxygen is the only gas which will serve to maintain the life of animals. It is transparent, colorless, tasteless, and inodorous; has a medium solubility in liquids; combines with carbon and hydrogen, and evolves heat in so doing. We may suppose our angel, accordingly, (whom we assume to be an accomplished philosopher, but not an omniscient one,) proposing, in the first place, to construct his atmosphere, so far as animals were concerned, entirely of oxygen. But on making trial of it, he finds that, if taken alone, it proves too stimulating. The actions of the body go on with undesirable rapidity; much more heat is evolved than the animal requires, it passes into a state of excitement and fever, and if allowed to breathe the undiluted gas, speedily perishes. The indispensable oxygen, then, must be diluted to the strength proper for animal respiration, by some bland, innocuous gas; and there cannot be a moment's hesitation as to where that gas will be found. The colorless, tasteless, inodorous, scarcely soluble, incombustible, negative nitrogen is clearly the diluent required; and we may suppose a series of trials leading our angelic atmosphere-maker to the conclusion, that, though the proportions might vary to some slight extent, in the one direction or the other, without causing the immediate destruction of animals, sustained life was compatible only with the respirable mixture containing four fifths by volume of nitrogen, and one fifth of oxygen. Animals in lakes, rivers, and the sea, having cold blood and a sluggish circulation, may have more oxygen than those breathing air by lungs, but it is not necessary to make a special

additional provision for them, as it is secured by the circumstance that oxygen dissolves in water to a greater amount than nitrogen does. Water-animals are, by this simple device, supplied with a more oxygenated air, suited to their peculiar condition.

It may here be asked by some thoughtful person, if nitrogen plays no other part in reference to animal respiration than to dilute oxygen, might not the same end have been equally well gained by diminishing the respiratory organs of animals, so as to have had them four times smaller in capacity than they are? They would then have been filled at each inspiration, with one fifth of the volume of air which at present enters them, so that the atmosphere might have consisted entirely of oxygen. In reference to such a suggestion we would observe, in the first place, that we have no right to assume that nitrogen is of no use to an animal, merely because we cannot show that it is of service; and secondly, that such is the balance of organs in a living creature, that the dimensions of one could not be altered without requiring an alteration in the size or capacity of all. If we alter the lungs, we must alter the heart, the blood-vessels, the nerves—indeed, the whole animal. Now, without entering into minute discussion, we may suppose, that on the whole, even so far as the animal alone is concerned, it might be better to dilute the oxygen by a negative gas, and so maintain the bulk of the animal considerable, than to give it undiluted oxygen to breathe, at the expense of dwarfing and altering its whole organism. Moreover, we are not entitled to assume, that oxygen given alone, would have the same effect as that gas mingled with four times its volume of nitrogen. In all probability, it would not. We are not called upon, however, to enter into these discussions, but are entitled, on the other hand, to protest against any such suggestions being made as we have for a moment turned aside to consider. In such an argument as the one we are pursuing, we must either accept the animal as we find it, and consider whether or not the constitution of the atmosphere harmonizes with its necessities, or accept the atmosphere as it is, and ask whether the animal is so constructed as to live within it. We are at present, however, discussing the subject solely as chemists; it is quite competent for us to suggest, if we can, improvements on the atmosphere, but we are not at liberty to change the structure of the animal.

Neither, perhaps, is it impossible to indicate positive benefits which flow to all nature from the presence of nitrogen in the atmosphere. We would venture to suggest, in the face of those constant declarations, that no use can be found for it—that it was necessary for the welfare of animated beings that the mass of the atmosphere should be considerable, and this for many reasons; among the rest for these three:—

First—Because the vicissitudes of temperature at the earth's surface would be much greater than they are, and, in truth, would be incompatible with life, if there were no atmosphere to temper the ex-

treme alternations of heat and cold, which would occur on a naked globe. Our atmosphere equalizes, more or less, the temperature of the earth, as in small islands like Madeira, lying far out in the ocean, the climate is rendered equable by the mass of water surrounding it, which cools it in summer and warms it in winter. We do not desire to affirm that it was necessary that our atmosphere should have neither more nor less than the bulk it possesses, in order to temper our climate. It would be very difficult to find data from which to decide positively on this point. All that we say is, that it was requisite the volume of air should be considerable.

Secondly—A mass of atmosphere was necessary, that there might be considerable refraction of the solar rays, and a corresponding scattering and diffusion of the light, heat, and other agencies of the sunbeam; otherwise, certain essential conditions of animal and vegetable life would not be fulfilled.

Thirdly—A large volume of air was required, in order that great winds might be produced in it, by the rarefying action of the sun's rays, and the revolution of the globe round its axis. We need not stop to remind the reader how these winds bring us clouds, and carry them away, waft us fertilizing showers, and when they are too abundant, sweep the earth dry again; how they plough up the deep, and refresh all living things there; how they transport man and other animals over the sea, and in a thousand other ways are ministers of good.

Now, it would have been (so to speak) a waste of force to have made the mass of the air of a gas having powerful chemical affinities, seeing that these are not needed; an inert, elastic fluid, susceptible of vibrations and undulations, being all that is required. This, however, is to say too little; any of the readily combining gases would have been positively prejudicial. We have already seen that the air could not have had its volume increased by addition of oxygen, for that would have poisoned the animals. Moreover, it would have corroded the rocks at the earth's surface; oxidized every oxidable body; and wasted all things. To the other elastic fluids still greater objections apply. No gas would do half so well as nitrogen, for increasing the mass of our air without altering its properties otherwise than by dilution. What water is among liquids, in blandness, neutrality, and indifference, nitrogen is among gases.

On the whole, then, we may suppose our angel-chemist, after such a balancing of considerations as we have been discussing, and not being at liberty to alter the constitution of the animal, satisfying himself that the best possible atmosphere he could mingle for sentient living beings would be one consisting chiefly of nitrogen, and with a fifth of its volume of oxygen.

Having, then, provided for the welfare of the animal, our angel turns to the plant. It appears that the latter requires, speaking generally, four substances to maintain its growth; namely, certain inorganic salts, which, in general, it obtains from the soil; water, ammonia, and carbonic acid,

which it looks for, from the atmosphere. Supplied with these, it asks no other food, whether moss or oak-tree, but with its wonderful and quite inimitable chemistry, transmutes them into hard wood, green leaves, and beautiful flowers.

A certain proportion of water-vapor, then, (which, in truth, is as necessary for the animal as for the plant,) must be added to the atmosphere; likewise carbonic acid and ammonia. The quantity of the two latter will be determined by the number of the plants which are to grow at the same time on the surface of the earth. Let us in the meanwhile, however, not to complicate the problem, suppose the question of quantity left out of sight, and be content with an atmosphere, in which a certain unspecified number of plants and animals may live together.

It remains to ascertain that neither class of living beings shall injure the atmosphere for the other. The problem, however, is found to solve itself.

The oxygen which the animal breathes, it converts into carbonic acid, and water, and returns as such to the atmosphere. These the plant appropriates, disposing of the water to suit its own exigencies, making no use of the carbonic acid during darkness, when it sleeps, but drinking it in at every pore as soon as daylight awakes it, taking from it its carbon, and returning its oxygen to the air. There is no accumulation, then, of carbonic acid in the atmosphere, which would kill the animal, for the plant destroys it as fast as it forms. Neither is there accumulation of oxygen, which would ultimately slay both plant and animal, for the latter consumes that gas as quickly as the former supplies it. As for the ammonia, no additional device is needed to furnish it for the plant. The animal supplies it, as well as, in part, the carbonic acid. During life, the animal is evolving ammonia, which reaches the atmosphere, and nourishes the plant; and when the former dies, in return for feeding, directly or indirectly, on the vegetable during life, it leaves it a legacy of its flesh, blood, and bones, converts itself into carbonic acid, water, and ammonia, and leaving its inorganic salts in the soil, to be appropriated by the roots of the plant, ascends into the air, and feeds it through its leaves.

All this our angel foresees, and also that there shall not only be a constant mutual dependence between plants and animals, but likewise a balance as to relative numbers. For, if the plants shall strive to outgrow the animals, they will be stopped by a deficiency of carbonic acid and ammonia to maintain them; and if the animals shall seek to outstrip the plants in number, they will be poisoned by the accumulation of carbonic acid and the deficiency of oxygen. Each class, then, of living beings will control the other, and maintain its own privileges.

As to further provisions for maintaining the purity of the atmosphere, it appears, on reflection, that none are needed. If any organic bodies are carried up into it, being compounds of carbon, ox-

ygen, hydrogen, and nitrogen, and all oxidable, they will be converted into carbonic acid, water, and ammonia, and do service instead of harm. If any soluble inorganic bodies find their way into the air, they will be carried down again to the earth by the rain when it falls. And insoluble inorganic substances, being none of them volatile, cannot be raised into the atmosphere.

All this, then, being foreseen, we may suppose our angel-atmosphere-maker about to mingle the ingredients we have named, when it suddenly occurs to him that such a mixture as he proposes to make, will not remain homogeneously mingled, however thoroughly its ingredients may be at first incorporated.

With the properties of individual gases he is fully acquainted, but not with all their actions on each other. He knows, however, that all kinds of matter obey the law of gravitation, and that liquids which do not act chemically on each other, arrange themselves according to their relative densities. If it should be so with gases—and why should it not?—what will become of his atmosphere? The carbonic acid will descend dry, and poison the parched up plants and animals. The oxygen will float in a layer above it, the nitrogen above that, and far out of sight, the watery vapor will form an encircling zone, above which any stray hydrogen, or other light gases, which are thrown into the air, will arrange themselves in thin concentric spheres. In such an atmosphere, not to mention other peculiarities, every object on the earth's surface which reflected light, would be mirrored in fantastic images, like those of the mirage and the *fata morgana*, at the lines where the different strata meet.

All the goodly chemical contrivance already recorded seems likely, then, to go for nothing. The problem proposed to our angel he cannot solve, with the data which we have supposed furnished to him, and he returns to the great Creator, to confess, that whilst that universal law of gravitation relentlessly rules all things, he must be foiled in every attempt to clothe the earth with a respirable atmosphere.

The reply of the Author of all things we may suppose to be, that the law of gravitation, though wide in its bearings, is not universal, but can be suspended or overruled by other laws, when its operation is inconvenient or hurtful to the creatures who live under its influence; and that its action being prejudicial in the circumstances supposed, another law takes its place. Our angel is instructed, that though gases gravitate like other forms of matter, and exhibit greater differences among their relative weights than either solids or liquids do, nevertheless, when they meet, each acts as a void or a vacuum to the other, and they intermingle completely: so that not only will any number of elastic fluids, if once mixed, remain homogeneously mingled, but every gas or gaseous mixture possesses a power of diffusing equally through itself any new gas added to it. The problem of a respirable atmosphere is now solved:

and here we may bid farewell to our angel, and descend to breathe the air provided for us. Perhaps we have made too much of him, but there seemed something unnatural in assigning the task of atmosphere-making to a mortal, who both had an interest in its construction, and who, moreover, must have been miraculously preserved till that atmosphere was furnished for him.

How beautifully that property of interdiffusiveness among elastic fluids, comes in to crown and complete the other beneficial qualities of the atmospheric gases, will now be apparent. Every chemist who has written on his science as supplying proof of design, has dwelt long and lovingly on this law. We do so likewise, because the idea of a great Designer is never so fully brought out by physical science, as when a law permitted up to a certain point to rule without let or exception, is all at once suspended, and its place supplied by another. The example in the case before us, is the more instructive that the force overruled is the most universal of all known physical influences—that, namely, of gravitation. In general, science deals only with forces and powers, and carries us, at best, back to a great first cause; but here, if anywhere in the circle of her dominions, we seem, if but for a moment and dimly, to catch something like a glimpse of a personal God, saying to one law, “Hither shalt thou come, but no further, and here shall thy power be stayed,” and calling for another that was not, and it is, and all nature acknowledges a new rule.

We would pause, then, for a moment, to point out a little more fully than we have yet done, how beautifully this force or law of gaseous diffusion works in nature.

It may seem, at first sight, as if the law were an almost unnecessary provision: for the winds, it may be said, would intermingle the gases, and sweep away carbonic acid, for example, from the places where it was generated, and the currents occasioned by combustion would carry off that produced by fire. Moreover, it may be urged, that this poisonous gas would not accumulate in the air, for the sea and other waters would dissolve it, and remove it from the atmosphere; and even if it did collect there, the mass of air is so great, that all the carbonic acid produced in a century would not sensibly deteriorate it.

Without entering into minute discussion on these statements, it may suffice to say, that to maintain the atmosphere uniform in composition by the action of winds, would require tremendous hurricanes to sweep in every direction through it, and even the fiercest winds would only effect a most imperfect mixture. The currents occasioned by combustion would carry the noxious gases but a very short way, and would soon let them fall. Solution of the carbonic acid in the sea would kill all the living creatures there; and although it is true that the impurities added to the atmosphere are very small in quantity compared with its mass, it is equally true that they would prove most destructive to life, if not diluted through its entire

volume: and without the law of diffusion no such dilution could occur. Even if all the forces we have supposed able to supplant diffusion were at work, they would in many cases utterly fail to ward off evil. A solitary sleeper in a confined chamber, could gain nothing from the winds, or thermo-currents, or the far off sea. The carbonic acid from his lungs gathering heavy round his head, would soon steal away his senses. His breath would be to him the breath of death, and his first sleep his last. As it is, though we were inhabitants of an atmosphere as motionless as that in which the Ancient Mariner and his crew lay becalmed, and not one breath of wind stirred the still air, yet this silent and resistless force would lift up as on wings the heaviest gas, and send it to the limit of the atmosphere; and make the lightest descend like a shot bird, even to the very bottom of the deepest mine.

Few, perhaps, of our readers have considered how, but for this force, rain and dew would long ago have ceased to fall, and the green earth have been parched and dried up like a desert. “All the rivers run into the sea, yet is the sea not full. From the place whence the rivers came, thither they return again.” And why is it so? even because this force of diffusion, when assisted by the sun, is able to lift up the ocean itself, and to make it thin air.

We have all watched with delight a drop of dew lying in the cup of a flower; but few marvel at the fact that that little drop returns to the air whence it came. Why should it not lie in its flower-cup forever! A pearl lies at the bottom of the sea, and makes no effort to float up to the surface; and yet the difference in density between the pearl and the sea is much less than that between the dew-drop and the air. A globule of quicksilver let fall into the ocean rests in its bed forever, yet it is only some eleven times heavier than the water above it. The dew-drop is 815 times more dense than the air, and there are hundreds of tons of the latter pressing on it; but no sooner does the sun arise, than it brightens and exhales to heaven. It bounds up like a bird into the blue sky. The air opens its arms for it, and lifts it into its bosom, and by and by spreads it from pole to pole, and it encircles the world.

The atmosphere thus solicits and encourages—nay, compels the rise of vapor, and keeps undiminished an embryo store of refreshing dews and warm showers for the earth, and so it ever holds good that “the clouds come after the rain.”

One last reference to this law. But for it, all other contrivances for maintaining the life of animals would have totally failed to secure that end, for respiration would have been impossible. To sentient beings, the atmosphere would have been as useless as the most dainty and nutritious food is to one who has not the power to swallow. There is this perplexing problem to be solved in the case of respiration. An animal has not two sets of air-tubes, as it has two kinds of blood-vessels, along one of which (the arteries) the blood

goes, whilst by the other (the veins) it returns. There is only one windpipe in animals, by which the oxygen may travel to reach the blood, and the carbonic acid return to reach the air. By the same channel we must constantly cause two counter or reverse currents to pass; a stream of oxygen from the outer air to dissolve in the blood; a stream of carbonic acid from the blood to dissipate into the air. The breathing tube of an animal is thus like a railway tunnel, through which trains are constantly passing in opposite directions, and yet there is but one pair of rails.

There is no mechanical or vital device for effecting the transference of the opposing aerial currents; no living alternating pump like the heart, which should this moment suck oxygen into the blood, and the next moment suck carbonic acid out of it. The muscles of the chest, by their action, alternately fill and empty the larger wind-tubes, or what we may call the lobbies of the air-galleries. It is only in the narrow passages and distant corridors, that the blood and air meet and act on each other. There, however, the pantings and heavings of the chest have no direct effect in filling or emptying the air channels. It is all occasioned by the power of diffusion. The issuing carbonic acid acts like a vacuum to the entering oxygen, or at most, neither gas resists the passage of the other, more than the pebbles in the bed of a stream do the water flowing over them. They glide past each other, impelled by an irresistible force, which obliges them to change places, so that a certain volume of the one cannot by a possibility travel in one direction, without permitting, nay, without compelling, a certain volume of the other to pass in the opposite one. The gases entering and leaving the blood are like weights hanging at opposite ends of a string suspended over a pulley, or like the buckets in a well. The one cannot sink without causing the other to ascend, or either move in one way, without causing the other to move in the reverse one. There are animals in which the air-tubes are as rigid as iron, so that they cannot expand or contract to carry air to or from the blood. In these the force of diffusion alone maintains respiration, but without that force it could not go on in any class of terrestrial beings. So much for this wonderful law.

The analytical method we have followed in studying the chemistry of the atmosphere, has had the necessary advantage of compelling us to pursue it bit by bit, and, as it were, piecemeal. We must now try to conceive of the atmosphere as a whole, and to realize clearly the idea of its unity. And what a whole! what a unity it is! It possesses properties so wonderful, and so dissimilar, that we are slow to believe that they can exist together. It rises above us with its cathedral dome, arching towards that heaven of which it is the most familiar synonyme and symbol. It floats around us like that grand object which the apostle John saw in his visions—"a sea of glass like unto crystal." So massive is it, that when it begins to stir, it tosses about great ships like playthings, and

sweeps cities and forests, like snowflakes, to destruction before it. And yet it is so mobile, that we have lived years in it before we can be persuaded that it exists at all, and the great bulk of mankind never realize the truth that they are bathed in an ocean of air. Its weight is so enormous, that iron shivers before it like glass; yet a soap-bell sails through it with impunity, and the tiniest insect waves it aside with its wing.

It ministers lavishly to all the senses. We touch it not, but it touches us. Its warm south winds bring back color to the pale face of the invalid; its cool west winds refresh the fevered brow and make the blood mantle in our cheeks; even its north blasts brace into new vigor the hardened children of our rugged clime. The eye is indebted to it for all the magnificence of sunrise, the full brightness of mid-day, the chastened radiance of the gloamin, and the "clouds that cradle near the setting sun." But for it, the rainbow would want its "triumphal arch," and the winds would not send their fleecy messengers on errands round the heavens. The cold ether would not shed its snow-feathers on the earth, nor would drops of dew gather on the flowers. The kindly rain would never fall, nor hailstorm, nor fog diversify the face of the sky. Our naked globe would turn its tanned unshadowed forehead to the sun, and one dreary, monotonous blaze of light and heat dazzle and burn up all things. Were there no atmosphere, the evening sun would in a moment set, and, without warning, plunge the earth in darkness. But the air keeps in her hand a sheaf of his rays, and lets them slip but slowly through her fingers; so that the shadows of evening gather by degrees, and the flowers have time to bow their heads; and each creature space to find a place of rest, and to nestle to repose. In the morning, the garish sun would at one bound burst from the bosom of night, and blaze above the horizon; but the air watches for his coming, and sends at first but one little ray to announce his approach, and then another, and by and by a handful, and so gently draws aside the curtains of night, and slowly lets the light fall on the face of the sleeping earth, till her eyelids open, and, like man, she goeth forth again to her labor till the evening.

To the ear it brings all the sounds that pulsate through it. The grave eloquence of men; the sweet songs and happy laughter of women; the prayers and praises which they utter to God; the joyous carols of birds; the hum of insect wings; the whisper of the winds when they breathe gently, and their laughter and wild choruses when they shriek in their wrath; the plashing of fountains; the murmur of rivers; the roaring of cataracts; the rustling of forests; the trumpet-note of the thunder; and the deep solemn voice of the everlasting sea. Had there been no atmosphere, melody nor harmony would not have been, nor any music. The earth might have made signs to the eye, like one bereft of speech, and have muttered from her depths inarticulate sounds, but nature would have been voiceless, and we should have gazed

only on shore "where all was dumb." To the last of the senses the air is not less bountiful than to the others. It gathers to itself all perfumes and fragrance; from bean-fields in flower, and meadows of new-mown hay; from hills covered with wild thyme, and gardens of roses. The breezes, those "heavy-winged thieves," waft them hither and thither, and the sweet south wind "breathes upon bands of violets, stealing and giving odor."

Such is a faint outline of the atmosphere. The sea has been called the pathway of the nations, but it is a barrier as well as a bond between them. It is only the girdling and encircling air which flows above and around all, that makes the "whole world kin." The carbonic acid with which our breathing fills the air, to-morrow will be speeding north and south, and striving to make the tour of the world. The date trees that grow round the fountains of the Nile will drink it in by their leaves; the cedars of Lebanon will take of it, to add to their stature; the cocoa-nuts of Tahiti will grow riper upon it; and the palms and bananas of Japan change it into flowers.

The oxygen we are breathing was distilled for us some short time ago by the magnolias of the Susquehanna, and the great trees that skirt the Orinoko and the Amazon. The giant rhododendrons of the Himalayahs contributed to it, the roses and myrtles of Cashmere, the cinnamon-trees of Ceylon, and forests older than the flood buried deep in the heart of Africa, far behind the Mountains of the Moon.

The rain which we see descending was thawed for us out of icebergs which have watched the pole-star for ages; and lotus lilies sucked up from the Nile and exhaled as vapor the snows that are lying on the tops of our hills.

The earth is our mother, and bears us in her arms; but the air is our foster-mother, and nurses each one. Men of all kindreds, and peoples, and nations, four-footed beasts and creeping things, fowls of the air and whales of the sea, old trees of the forest, mosses wreathed upon boughs, and lichens crumbling on stones, drink at the same perennial fount of life which flows freely for all. Nursed at the same breast, we are of one family—plants, animals, and men; and God's "tender mercies are over us all." Must we strive, by rule of logic and absolute demonstration, to shut up each reader into a corner, and compel him to acknowledge that the atmosphere was not self-created, but was made by Him "who stretcheth out the heavens as a curtain, and spreadeth them out as a tent to dwell in?" Is there any one who can resist exclaiming, "O Lord! how manifold are thy works, in wisdom hast thou made them all!"

To utter some such exclamation will be the natural dictate of most minds. But let us put aside every attempt to take advantage of emotional feelings excited by appeal, and calmly ask ourselves what we are entitled to build upon the truths we have been learning.

If our readers have assented to the arguments

which induced our imaginary atmosphere-maker to choose the constituents for an atmosphere which we have supposed him to select, they will readily acknowledge that it is impossible not to believe that the air was mingled by a being, or by beings, perfectly acquainted with the anatomy and physiology of the plants and animals which were to breathe it and feed on it. The atmosphere, then, has not the characters of a chance compound, but all the peculiarities of a complex mixture, carefully mingled for a special object.

If, then, we acknowledge design, we imply the existence of one or more designers. We cannot take it upon us to affirm, from physical science, that there certainly was but a single designer, and not several acting in concert. We must be content with showing, or endeavoring to show, that a perfect unanimity of counsel prevailed between the maker of the plant and the maker of the animal—the creator of the sea and the author of the earth—the former of the sun and the deviser of the atmosphere, and then appeal to the love of unity in every man's breast, and ask him if that is not outraged by the cumbrous, unwieldy, and unnecessary hypothesis, that there have been many Gods, and not one, employed in fashioning the globe. Let it, however, be freely acknowledged, that physical science can only prove that power, wisdom, and knowledge have been and are at work in the world. Whether they are centred in one Being, or are shared among many, is a problem it cannot undertake to solve.

On the other hand, if it shall appear that there is an *a priori* intuition in our minds of one God—if our consciences shall be found testifying to the difference between right and wrong, and connecting that distinction with a one Moral Governor—if human tradition shall be found, amidst all polytheistic expansions, to have at bottom held firm by the idea of a single Creator and Ruler of the world—if an accredited and trust-worthy divine revelation shall have assured us of the unity of him who has declared that "the Lord our God is one Lord," then physical science will affirm that all creation entirely accords with such a declaration. If any one will assert that it is more probable that there were, and are, several creators and preservers of the world, than that there is but one, the burden of the proof, we apprehend, lies with him.

We consider it unnecessary to enter into a formal discussion of the evidence of design, for if the array of proofs we have brought incidentally forward do not establish its existence, there must be a fallacy in the whole argument. Moreover, we take it for granted that all who are satisfied that there is design, will acknowledge there must be a designer. Either, when we see design, we infer that there must be a designer, or we are not necessitated to draw such an inference. If the latter be true, the whole of natural theology is baseless, and it is quite as probable that the world made itself, as that God made it. We suppose, however, that we have not a single reader who

doubts either the existence of design or of a designer. In truth, the argument would be worth very little, if it needed eight Bridgewater Treatises to prove that it was true. A single flower will serve as well as an atmosphere to prove design. Even a grain of sand bears unmistakable marks of the fingers of a most exquisite artist. The marvellous thing would be, if so much as a particle of matter could be found which proclaimed itself to be formless and designless. There is none such in the universe. We should be terrified if we found one.

We suppose it, then, acknowledged that the world gives proof of wisdom, knowledge, and power having wrought, and being at work in it; and pause to ask the question, does it also show that beneficence is working there?

This is the matter which most concerns us. It is the only part of the problem which, in a moral point of view, we need be careful to answer. Knowledge, wisdom, and power are but means to an end. If they are not wielded by justice, mercy, and benevolence, or if they are guided by evil influences, the designs they work out may have no mark of goodness upon them, or even bear the stamp of utter malevolence.

What, then, is the testimony of physical science on this subject? Does it declare that unthwarted benevolence is found triumphantly working out a great scheme for securing unalloyed and perfect happiness to all under its control? If the answer is not already on our lips, it will soon be. That same atmosphere which brings summer showers, brings winter rains also; sends chilling east winds, cold frosts, and pitiless hailstorms; scatters the seeds of a thousand diseases, fans and nurses them till they ripen to death, and helps consumptions and fevers to sweep their thousands away. Its diffusive power is not more ready to intermingle the vital oxygen with the other elements of the air, than it is to carry the subtle poison of plague or cholera round the globe. But for it, miasms and malaria would confine their ravages to the spots where they originated, or at worst travel outwards on by slow and warning steps, so that men might flee from them. But to the air they are as welcome as the choicest perfumes of flowers. It will take no refusal, but adds each to itself, and every living being is compelled to drain the poisoned draught.

The air has its warm zephyrs and beneficent trade winds, but it has also its monsoons and tornadoes, its whirlwinds and hurricanes, which depopulate whole islands and sweep the earth like besoms of destruction. It has its small rain for the tender grass; its warm mantle of snowdown to lay over the young leaves till summer shall come; its refreshing dew for the sleeping flowers; but it likewise holds in its right hand a flaming thunderbolt, with which it shatters navies to fragments, whilst it asks, in the name of God, "Who can thunder with a voice like him?" How many millions of men have died of diseases of the lungs! Whilst we have been rejoicing over the exquisite

adaptation of the atmosphere to the necessities of animals, and to the respiratory organs with which they are provided, hundreds of sufferers have been agonizing under the wasting pangs of consumption, not to mention other diseases. What is this? The lungs of those invalids were made to breathe air, and air was provided for them. What, then, has altogether failed and utterly gone wrong? The vital and sustaining oxygen is burning up the body, and maddening it with fever—the bland and innocuous nitrogen is exciting fierce fits of uncontrollable coughing; each note a death knell. The water-vapor, so necessary to life, is bursting forth in clammy perspiration, swiftly stealing strength away. The bells are all ringing backwards. The instrument that once syllabled music so sweet, is jangling only discords. Are those who are tormented thus solitary sufferers, rendering the happiness of all others only the more conspicuous by the contrast they afford? All men do not die of consumption, nor of diseases of the lungs—but all die. Not one pair of lungs has yet been found, nor any kind of respiratory organ of man or animal, which has not worn out, or what is worse, has not been cut short in its working, and thrown aside like an instrument wantonly destroyed. The exception proves the rule, but there is no rule proved only by exceptions. Our argument set out by declaring that animals were made to live, and furnished with all the means of living; it ends by acknowledging that all die. It has further to admit, that scarcely one of the higher animals perishes by what we call natural decay, or liken to the winding down, or silent cessation of the moving power of a machine. It confesses, mournfully, that there is not merely death, but likewise suffering, anguish and agony, for which physical science can show no final cause, or see any reason. To this great mystery we seek for a short space to direct the reader's attention.

We count it a great and blameworthy defect in nearly all our recent publications on Natural Theology, that due prominence is not given to the dark as well as to the bright side of nature. A wrong is thus done to science, to which the perplexed inquirer is sent to read a lesson which it does not teach, and to find depicted a character of God which it disowns. An equal wrong is done to revelation, which is made to appear as if it gave a less perfect account of the Almighty than nature does, and did not proclaim him the infinitely benevolent being which his works show him to be. It seems to us, therefore, a plain and imperative duty to illustrate, by one or two examples, the extent to which chemistry reveals evil as well as good in the world, and thereafter to consider, very cursorily, how far the existence of that evil modifies our views of the benevolence of God. We rejoice to have an opportunity of disavowing the practice so common among recent authors, of slurring over the difficulties of natural theology. Some of them write and speak as if there were absolutely none. Professor Fownes, for example,

in his "Actonian Prize Essay," carries us through a succession of proofs of benevolence, and scarcely halts for a moment to hint that there is so much as the shadow of a ground for suspecting that this benevolence ever fails, or seems to fail, in its purpose. He appears to have considered, perhaps naturally enough, that the prize was to be given for adducing proofs of kindly design, and to have studiously omitted all reference to anything pointing the opposite way. One of his concluding advices to his reader is, to consider himself in the hands "of a Being of *unmixed and unbounded benevolence*." ("Act. Essay," p. 153.)

Others, who have discussed the same question, have lingered but for a moment over the difficulties of their argument, thankful if they could only suggest some most improbable explanation, and pass on to more tractable topics. Dr. Prout, for example, in his "Bridgewater Treatise," arrests for a moment his exposition of beneficence, to ask what the evil in nature, real or apparent, means. All, however, that he can offer in the way of explanation on the subject is to ask, "Who can say that the minor evil may not have been essential to the greater good?" "That the poisonous metals, for instance, are not as it were the refuse of the great chemical processes by which the more important principles of nature have been eliminated?" It is important to notice what Dr. Prout's argument is. According to him, the poisonous substances in nature are the refuse of the processes by which our world was made; and are as necessarily present in it, as dross, and slags, and scoriae accompany the manufacture of a steam-engine, or other similar machine. The argument, unfortunately, if it prove anything, proves a great deal too much. There is not one of the metals which does not yield several compounds, which even in moderate quantity are poisonous both to plants and animals; the greater number, after combination with the other elements, are deadly poisons. If poisonousness, then, be the mark or sign of a body being refuse, every one of the metals stands in this predicament; and from gold to iron, each must be looked upon as bearing no stamp of design upon it. Now, the metals are the most abundant chemical elements, 46 out of the 60 being metallic, so that at one stroke, Dr. Prout brands more than two thirds of simple chemical substances as refuse matter. The remaining 14 non-metallic elements can as ill bide the test as the metallic ones could. Five of them, chlorine, bromine, iodine, fluorine, and phosphorus, are more powerful poisons than any metal. In truth, there is not one of the metals of itself poisonous, not even arsenic, mercury, or copper. It is not till they enter into combination with some non-metallic substance that they become deadly; and no body is more effectual in rendering them so, than that life-sustaining oxygen which Dr. Prout has specially referred to, as showing marks of beneficent design.

The last nine elements, oxygen, hydrogen, nitrogen, carbon, boron, silicon, sulphur, selenium,

and tellurium, are not poisonous uncombined. Every one of them, however, forms destructive compounds with the metals; in which it is to be observed, that the non-metallic body is as much concerned in conferring the character of noxiousness to vegetable and animal life, as the metallic element is. The poison, arsenious acid, for example, is a compound of the metal arsenic and of oxygen, neither of which is singly poisonous. The deadliness of the resulting body is as much owing to the oxygen as to the arsenic; and so with similar compounds. Moreover, oxygen, hydrogen, nitrogen, and carbon, the characteristic elements of plants and animals, have only to unite with each other to form compounds much more deadly than any mineral poisons. Thus, the chief constituents of air, nitrogen and oxygen, combine to form the corrosive nitric acid. Carbon, nitrogen, and hydrogen make up the most terrible of all poisons—prussic acid; and these are not solitary cases, for the same elements form, by interunion, many other compounds scarcely less deadly.

On inquiry, then, it appears that every chemical element is originally, or becomes by combination, a poison; and as the globe, including its inhabitants, consists solely of poisons, our world is nothing but refuse. When our poet declared of Nature that—

Her prentice han' she tried on man,
And then she made the lasses,

every one admired the beauty of the thought. But who ever expected to be told, by way of proving that God was beneficent, that the Creator had served an apprenticeship to world-making, and that, too, to so little purpose, that he failed in the manufacture of the globe we inhabit? One can only forgive the folly, not to say profanity, of the thought, by believing that the author did not see whither his argument led. In truth, he appears scarcely to have uttered it before he became ashamed of his opinion, for he immediately asks if it be not possible "that these poisonous principles have not been left with such subdued properties as scarcely to interfere with His [God's] great design—not because they could not have been prevented—not because they could not have been removed—but on purpose and designedly to display his power?"

It is the absence of anything like a resolute attempt to look this great problem of physical evil in the face, that renders our *Bridgewater Treatises* so little valuable as works on natural theology. We except entirely from this charge Dr. Chalmers' beautiful volume, which has none of that appearance of being written to order, so unpleasantly evident in some of the others; and we fully acknowledge the value they all possess as scientific treatises. But to prove design, and even benevolent design, is not enough; neither is much elaborate argument necessary to establish its existence. The great mass of mankind are perfectly willing to acknowledge, and to believe,

that feet were made for walking, teeth for mastication, and eyes for vision. It is an easy task for an author to prove that these organs were intended for the purposes specified, when he is addressing readers who have all their lives taken for granted that such were the uses they were intended to serve. Let all thanks and honor, notwithstanding, be given to the accomplished men of science who have with so much skill and patience investigated, and rendered intelligible to every reader, the exquisite devices and arrangements with which nature is full; even if they have done no more than illustrate a familiar argument, and justify an anticipated and foregone conclusion. At the same time, however, we are surely entitled to ask, at the hands of those who engage to prove to us that nature is the sum of innumerable contrivances for securing health, happiness, and life, why it is that disease, agony and death reign ultimately supreme, and vanquish their opposites!—do these latter flow from the same source as the former?—are they coordinate and necessary parts of the system of nature?—have they always existed?—will they ever cease to be?—do they destroy the force of the argument for the benevolence of the Creator?—do they imply that evil as well as good powers have been, and are at work in the world? These and many similar questions, as it seems to us, call for much fuller consideration than they have received at the hands of any of our later writers on natural theology. Our ultimate estimate of the value of the whole argument must be determined by the modes in which we dispose of them; and the slight and unsatisfactory way in which they are ignored, passed by, or summarily dismissed, in works otherwise so able as those to which we have been referring, is the reason, we suppose, why the *Bridgewater Treatises* on the physical sciences are esteemed by *men* on account of their science, not their theology, and are scarcely read by *women* at all. We count it that had they fulfilled their purpose, it would not have been so. To intelligent and cultivated women, with their fine sense of harmony, their keen sympathy with suffering, and horror at pain, any honest and earnest attempt to account for the physical evil that is in the world, must have been acceptable, and they would not have declined to master the difficulties of chemistry, of anatomy, or geology, had these engaged to lift even a corner of the dark veil which hides God's goodness from us. But they might well forbear attempting the study of intricate and unfeminine sciences, when these promised, at the utmost, to do no more than prove that wisdom and benevolence are attributes of God—a truth which, had they ever doubted it, they could prove to themselves more pleasingly, and quite as fully, by a glance, like Milton's Eve, at their own reflected images; by the sight of a seashell or a summer flower, as by reference to the noxious gases of the laboratory, or the horrors of the dissecting-room.

To a task so difficult as that of inquiring how far physical science can harmonize the evil, she

brings to light, with the good, we are not about to address ourselves. We propose only to pave the way for such an inquiry, by pressing upon our readers the reality and extent of the physical evil that is in the world. Two examples of its frequency are all that our space will allow us to furnish. The first of these shall be the occurrence of chemical substances or conditions destructive to vegetable and animal life, and that in circumstances where living beings cannot avoid being destroyed by them. No one could acknowledge more willingly than we have done, that, speaking generally, living beings were made to live and to enjoy life, and that the means for securing them that enjoyment were abundantly provided. It is not the less true, however, that they are not guarded against the destructive influence of agents hostile to life, which frequently exterminate thousands at a stroke. Millions of animals have been seen lying dead at the same time on the shores of the Southern Atlantic islands; countless numbers of fishes have been known to perish at once, by the discharges of submarine springs and volcanoes, which poison the sea for miles around; and earthquakes, volcanoes, tempests, hurricanes, and pestilences deal destruction wholesale to those on the dry land. It has been so, not only since the beginning of the historic era, but from a much earlier period. Among the records of bygone ages, which geology has written down with her lithographic pen, and preserved forever, are dark and constantly recurring tales of oceans full of living creatures stifled simultaneously by sudden and swift catastrophes, which gave no warning of their approach, and from the disastrous effects of which there was no escape. Nor have exterminations of this kind been limited to animals low in the scale of organization, like fishes. The giant limbs of the mammoth have not saved him from being reached by a destruction so swift and unexpected, that he has been entombed entire in ice, as flies are found encased in amber, before decay had time to make any impression on his huge carcass. The countless fossil remains of tropical animals found in our own country, appear to indicate that the temperature of our northern latitudes was once much higher than it is now, and that the change in this respect proved as destructive to animal life, as the transportation of the creatures in our equatorial regions to either of the poles would do at the present day. Geology is mournfully full of similar records.

It is not that animals die, but the mode in which they are cut off, that afflicts us. Some physiologists affirm, that no provision or necessity for death can be shown to exist in any animal, which to all appearance, might, if not invaded from without, live forever. But the greater number of authors, and assuredly more justly, point out that, from the instant when life commences, till its close, a series of changes is going on, which necessitates extinction of vitality. The infant is rosy and plump, with elastic cartilages, and soft, yielding blood-vessels and air-tubes; the old man's

blue veins start up, through the thin, wasted, meagre skin; below this, all the fat that rounded off the otherwise harsh outlines of the child, has been slowly and constantly removing, to accumulate round the heart and great arteries; the bones, once supple and yielding, have year by year been growing more brittle, till they snap through like glass; the arteries are fast becoming rigid, bony canals, and by and by will cease to carry blood; the grasshopper will become a burden, and the golden bowl be broken at the fountain.

These changes are independent of external violence and of disease, and show themselves in all animals. They can only obscurely, and with a certain propriety, be compared to the wearing out of any machine of man's construction; for, in the latter, they are the same materials weakened by long use, and worn out by friction and concussion against each other, that at length cease to move, or give way; whereas in the former, though this also is happening, there is something more going on. The body of the aged man is not that of the middle-aged one grown older, but a quite new body, constructed upon a principle of constantly decreasing mobility, and intended to go on changing and becoming less mobile, till it stop altogether. Death coming on animals in this way, would be no King of Terrors; he would be as little fearful, he would often be as welcome, as his twin-brother, Sleep. Death in such a shape would not, we think, be invested by us with positive attributes at all; it would only be *not* life.

If, in this way, we saw an animal developing from its germ, as a flower does from its seed, reaching maturity, retaining this for some time; then declining gradually; and finally, like a watch which has unwound its spring, or a clock with its weights rolled down, dying as a flower dies—its merely ceasing to exist would not necessarily excite any painful feeling or regret, especially if its death made room for a successor in the bloom of youth, and destined to go through the same series of happy and painless changes. A creature born into existence in *TIME* has no injustice done to it, if its life be brought to a close in time. Our own immortality is not by birthright, but by the gift of God.

But when we see a noble, beautiful animal, this moment exulting in the possession of life and strength, and drinking in with keenest zest the air and light of heaven, and the next a "kneaded clod," the feeling natural to us is one of surprise and disappointment, like that with which we should witness a magnificent steam-engine, or other exquisitely-constructed machine, suddenly broken to pieces whilst executing its movements.

Every one must have felt, in slaying even a noxious, still more an innocent animal, that it was a harsh thing and a sad one to take away its life—a thing we cannot restore. Othello, besides the deeper reasons for lamenting Desdemona's death, grudged sorely the mere extinction of her beautiful animal existence, and contrasts the impossibility of reviving it with the power he had of rekindling an extinguished flame:—

Put out the light and then put out the light.
If I quench thee, thou flaming minister,
I can again thy former light restore,
Should I repent me;—but once put out thine
Thou cunning'st pattern of excelling Nature,
I know not where is that Promethean heat
That can thy light relume.

When this, to appearance, wanton destruction of animal life occurs not once, but many times, and is seen overtaking thousands of creatures simultaneously, and that throughout the whole period of time during which, so far as we know, life has shown itself on the globe, the conceptions we had formed of material nature as a harmoniously-adjusted system before we took cognizance of this fact, must be qualified as soon as we become aware of its existence; and either we must confess that the harmony we had assumed to exist, is liable to great and violent interruptions, or acknowledge that we must find, if that be possible, a new and perhaps unattainable standard of harmony, which shall include, and find a place for what was irreducible to the former one.

We refer at present, it will be observed, to death, not as implying pain or suffering, but simply as being in many, indeed in most cases, the sudden and unexpected stoppage of a machine, which, but for extrinsic interference, would have continued to perform its functions for a much longer period, perhaps forever. The Bridgewater anatomist and physiologist have undertaken to prove to us that each animal is a wondrous self-sustaining piece of living mechanism, which, if not interfered with, shall, by imperceptible gradations, bring its movements to a close, and still itself to rest. The Bridgewater chemist has engaged to demonstrate that the vital stream which makes the living engine go, shall ever be supplied; that the fuel that evolves the steam, the air that burns the fuel, and the oil that lubricates the hinges, shall constantly be forthcoming, and anatomist, physiologist, and chemist together have exclaimed, as did Belshazzar's courtiers of old, O king!—O animal! "live forever," when Death's spectral fingers on the wall write, "Mene, Mene," and the life that was to be so abiding, in one moment is gone.

It must, we think, be acknowledged that as the sudden blotting out, or extinction, of one of the planets of our system would appall and terrify us, so the extinction in its prime of even a single animal, still more of several, would, and does amaze us. It throws a dark shadow over the delight with which we had witnessed the happy movements and abounding life of the joyous creature, to see it cut off prematurely, with deep capacities of enjoyment unsatisfied, and a thousand desires unfulfilled. All the evidence previously brought forward in proof of benevolent design, and all the conviction thereby induced of beneficent purpose, only make the mystery and the sorrow the greater. When a crazy old hulk, often patched and mended, and long leaking through every seam, at length becomes water-logged and swamped in some sluggish canal, we mourn little over its loss; but when a President steam-ship, with its gigantic engine beating like a

great heart, its mighty paddles like revolving limbs, its fire-throat breathing forth smoke and flames, its wing-like sails, its busy crew, and gay and gallant company of sea-farers, founders in mid ocean, who can find words for his sorrow? No sophistry, we think, of ingenious, one-sided advocates can alter this feeling. A watch, to take the famous Paley example, was made to go, to be wound up and to wind down; not to be broken to pieces. An animal appears made to exist through various phases, and finally to bring peacefully its motions to a close; not to have its life suddenly taken away, and its movements abruptly arrested.

In one way only can our feeling of grief at the failure of benevolent design be removed or appeased—namely, by evidence being adduced to show, that some higher and more comprehensive scheme of love than the one we have assumed to regulate this world, demanded the apparently non-benevolent, we will not say the malevolent, interferences which have so perplexed us. Whether any such higher scheme can wholly or in part be discovered, we shall presently consider.

Before doing so, however, it is necessary to discuss a question much more difficult, in reference to the subject before us, than the one the consideration of which we have just adjourned. Death, which is not necessarily unbenevolent, not only reigns over organic nature, but something shows itself far more anomalous in a happy world—namely, pain; and where violent death and pain go together, and are constantly manifesting themselves, the anomaly reaches its height. It awakens, and must awaken, the saddest feelings, to consider that pain appeared in this world as soon as animal life did, and that they have reigned side by side, ministering to each other and to death, not only since man was placed on the globe, but for untold centuries before.

We take this as our second example of physical evil. Death, we have seen, tramples out and effaces design. We are now to consider pain, which mocks and distorts it. It comes within the sphere of chemistry to discuss even pain, for perhaps the greatest cause of its infliction is the slaughter of one animal for food by another, and the science we are specially discussing, is perplexed to account for such an arrangement, since, according to the results of chemical analysis, carnivorous animals might have been fed otherwise, than by living on their herbivorous companions.

We have already referred to the evidence which geology supplies, of death having triumphed throughout the early epochs of this earth's existence. The leaves of her stone book, however, have written on them, not merely records of death, but likewise of pain. The fossil fishes which abound in many of our strata, are not found stretched out in the postures of repose, which they would have assumed had they perished calmly, but like men who die in battle, with agony upon them, their bodies are thrown into violent contortions. Each has petrified its last convulsions, and like the

Laocoon and the Dying Gladiator, shows its mortal throes sculptured in stone.

These immortal agonizing statues are not strange, solitary figures. We gaze with wonder at the world-famous Elgin marbles of the British Museum, and sympathize with the expressive looks of agony which the fighting Centaurs and Lapithæ have worn for ages. Whatever else be observed in these beautiful works of art, he who runs may read in them a plain tale of combat and strife, a struggle for life and death, mortal blows struck, pain relentlessly inflicted, and weakness giving way before the superior strength which unsparingly smites it down. When we tear ourselves reluctantly away from these wondrous sculptures, and pass to the Geological Hall in the same museum, another set of friezes appears, older by ages, perhaps by millions of years, than those of the Parthenon; carved by a chisel far excelling that of Phidias; telling of creatures, stranger even than Centaurs, and of battles more terrible than those that have been fighting in marble for centuries between these monsters and their human foes; different as everything else is, the story, however, is the same.

The heroes of the geological bas-reliefs are ichthyosaurs, plesiosaurs, and pterodactyles, lizard-birds, gigantic crocodiles, strangely compounded, and Titanic Gorgons, and chimeras dire, such as we thought could be witnessed only in nightmare dreams, till with forms more hideous than eye had seen, or ear heard of, or it had entered into the heart to conceive, we gaze on their stone effigies before us. In their lifetime, those strange beings were all of them warriors. The mortar-cap, the chiselled chain-shirt, and cross-hilted sword of a recumbent monumental figure, do not more plainly tell that below lie the bones of a soldier crusader, than the fierce jaws, great rows of dagger-like teeth, cruel fangs, sharp claws, and other accoutrements of those stone mummies, proclaim that their possessors were the Black Hussars of the pre-Adamite world, and gave no quarter. The Parthenon figures only repeat the story of the Gorgon Frieze; in the latter we as plainly read as in the former, battle and murder, strength remorselessly vanquishing weakness, and the victim reaching death through the appointed stages of torture and agony.

This tale of suffering, like those dark legends which are found in every country, is repeated all over the globe. Wherever the geologist digs, he finds pain "graven on the rock forever." A museum of fossil-bones is like the arsenal of a warlike nation. Weapons of destruction, teeth, claws, and horns, the swords, daggers, and spears of life militant, far outnumber toothless jaws and inoffensive mouths, the reaping-hooks and plough-shares of the peaceful herbivora.

We have referred to past, rather than to present, evidences of pain, because for one thing it stands out from everything else, when taken in connection with creatures which had not that minister of woe

to them, man, to involve them in misery; because for another, the problem is every way more simple; because, also, it shows that animal suffering is older than human happiness; and, lastly, because it proves what we wish to insist on in the face of all attempts to gloss the fact over—viz., that physical suffering, in relation to the lower animals, is no incidental, transient, or, as it were, interpolated thing, but that, historically, it is ingrained, and inseparably interwoven, into the whole fabric of our system.

But if we have not referred to the present, it has not assuredly been because suffering has become a dim legend, traceable only in obscure geological hieroglyphics, hidden, as it were, purposely, from us in the dark recesses of the earth.

To avoid complication of the question, and the consideration of topics with which physical science cannot deal, let us put man and his sufferings aside, and look only at the lower animals and their agonies. And as our space is limited, let a single case be selected, in evidence that pain is no forgotten pre-Adamite thing, but makes the whole creation groan and travail even now. We ask the Bridgewater natural theologian, who talks only of beneficent design, to reconcile with that beneficence this one fact, that there are myriads of animals which live only by destroying and devouring their fellows. Astronomers are familiar with a problem of great difficulty, called that of three bodies, which requires determination of the question, how will three of the heavenly bodies act and react on each other, in influencing and disturbing their several motions? We shall not propose so difficult a question to our Bridgewater author, but be content with requesting, at his hand, a solution of a problem of two bodies. It shall be this: given a carnivorous animal and the defenceless creature which it devours—to reconcile the suffering and death of the latter, with benevolence on the part of the Creator. Our problem-solver shall not escape, as he generally does, by discussing animals singly, dwelling upon the contrivances for its welfare which each animal exhibits in the construction of its parts, and stopping there. We acknowledge that a lamb is, *per se*, as benevolently fashioned as a lion; but taken together, we ask demonstration of benevolence caring for both. If we let the lion live, he will slay the lamb. If we take away the lamb, the lion will die. The two animals are, in the language of medical prescription, incompatibles; like an acid and an alkali, they cannot exist together.

If God, as revealed in nature, be, as Professor Fownes tells us he is, "a being of *unmixed* benevolence," what is to be made of this phenomenon? It is not an exception which proves the rule, but in regard to a great number of animals, the rule which has no exception. It is not by accident, or incidentally, that a beast of prey kills; he was made to destroy. If any one doubts this, let him study the construction of one of the carnivorous animals. We shall not propose for consideration the lion, for he has a poetical credit for magnanimity, which

might enlist the imagination in his favor, nor the beautiful tiger, nor the sun-loving eagle. Let us take an animal low in the scale of organization, and to which, therefore, nature might be expected to be more niggard of contrivances for its welfare, than she is to nobler creatures; and let it be one which no poet invests with imaginary virtue, nor any one regards with other feelings than those of horror. Let our example of a carnivorous animal be the shark. No author of "Bridgewater Treatises," or Actonian Prize Essayist, need ask a better evidence of beneficent design, so far as the individual animal is concerned, than the construction of the shark supplies. Its body is fashioned so as to offer the least resistance to the water through which it is to cleave its way, and enable it to move forward with a maximum velocity. Great as we are as a maritime nation, the accumulated skill of many generations has not taught us to build a vessel which can equal, or come near to, the shark in speeding through the sea. We have experimental squadrons on the waters, and read every day of one ship not being able to sail with the wind, and of another not able to beat up against it; of one failing in reefing, and another in tacking; of all faulty in some way. Our steamships are constantly being taken down, to have their engines altered, their masts lengthened or shortened; their whole equipments constructed on new, but, as it often proves, on still more erroneous principles than before. Our experimental squadrons must be objects of rare diversion to the fishes in the sea. Millions of millions of sharks have swum in the ocean, but no one has ever needed to be taken down to have his engine or heart shifted further forward or further back, or has required his paddles or screw-propellers, his fins or tail, to be adjusted at a new angle. No one of them ever misses stays, or goes upon a lee shore, or wrecks upon a rocky coast; but each, without compass or chart, sextant or chronometer, lunar or solar observations, is his own helmsman, and stoker, pilot, and engineer, and his little living yacht leaves men-of-war behind it, and can give distance to a Transatlantic steamer, and beat her in the race.

God has been very kind to the shark. Swiftness will not serve his prey to escape from the swifter fins which wing his pursuer, like a fiery poisoned arrow, to strike through the heart of his victim. The keen nostrils of the destroyer "scent the prey from afar," and conduct him, with unerring certainty, through great tracts of sea, to the ship where the invalid, near to death, will soon reward him for his waiting. His great eyes are much more beautiful, in some respects than our own. At the back of each, is a brilliant reflecting mirror, so that in the depths of the gloomy ocean, the faintest ray of light can be turned to account, and nothing but utter darkness can hide from him his prey. His teeth, in tripple rows, keen-edged, like scimiters, stand like the spikes of a portcullis on his cruel jaws, and one snap of them will lop a limb away. Would our Actonian essayist like to be the prey of this beneficently-constructed animal,

or seek to taste its tender mercies? Would he be willing to thrust his limbs into the shark's jaws, and find in his mutilation and agony an evidence of unmixed benevolence?

God disowns all these pretences to prove him the author of indiscriminate benevolence. The young lions roar to him for their prey, and seek their meat from God, and are answered as certainly as the lambs which bleat gently for green pastures. To the one as well as to the other he gives its meat in due season. "His tender mercies are over all his works." Physical science has affected to prove what even revelation does not profess to demonstrate—viz., that God shows himself to his creatures as an indiscriminately benevolent being. God does not. "He maketh darkness his secret place; his pavilion around him are dark waters, and thick clouds of the skies." "His ways are not our ways, nor his thoughts our thoughts."

Pain is no transient, incidental, occasional thing. It has pleased God, for purposes which physical science cannot divine, to provide for its constant infliction. One animal is commanded by its instincts not only to slay, but also to torture another. The cat does not merely kill the mouse, but is permitted to delight in its agonies. As for the explanations which Bridgewater and other treatises have professed to give, they need not detain us long. Some tell us that it was necessary that carnivorous animals should exist. We know not how the necessity can be established. The flesh of the lion is identical with that of the lamb; there is not the slightest difference between them. The scriptural declaration that "all flesh is grass," admits of the most literal chemical interpretation. The edible plants on which herbivorous animals feed, contain not merely the elements of their bodies, but their very substance. Muscular flesh and fat, red blood, milk, and wheat flour are the same bodies with their particles differently arranged. All that is in the one is in the other. The plant, as has been beautifully said, acts towards the animal as the hewer does to the builder—it supplies the animal with carved stones and chiselled materials, which the latter appropriates as it finds, and builds in to suit the scheme of its own edifice. The carnivorous animal finds nothing in the creature it devours, which it might not have derived from the vegetable food out of which the flesh of its prey was transmuted. For anything chemistry can show to the contrary, the lion might even now eat straw like the ox.

Again, we are told that but for the carnivorous destroyers, the herbivora would so accumulate as to become a nuisance. This, like the last declaration, is "a mere darkening of counsel by words without knowledge." Could the Almighty not have lessened the fecundity of the harmless animals, instead of increasing it, only that its fruits might be cut off violently in their very prime?—might he not have shortened the lives of the herbivora, and have brought them, after a brief and rose or butterfly-like life of happiness, gently to a close? If such modes of painlessly disposing of

animals occur to us, how many more must be present to the counsels of the Almighty all-knowing God.

Lastly, some have told us that the physical scheme we are under, is such as to secure the greatest happiness to the greatest number of living creatures. It may be so; but no science can show that such is the case. It is a fond hope of the heart, not a believed truth of the intellect. The afflicted patriarch of Uz exclaimed of old, "Oh that my grief were thoroughly weighed, and my calamity laid in the balances together!" but scales in which such things could be weighed were not to be found in Job's days, and are still wanting in ours. Chemistry is, of all the sciences, the one that most frequently uses the balance. She can weigh many things, but is not able to put suffering in one scale and happiness in the other, and to pronounce that the latter outweighs the former. Pain cannot be expressed by symbols, or agony reduced to formula. And even if science could show a preponderance of happiness, we should still, constituted as we are, murmur that the greatest happiness to the greatest number, did not signify unalloyed happiness to all.

Chemistry, then, shows a dark as well as a bright side, when appealed to by the natural theologian. The first example we have selected is a positive one; it exhibits nature deliberately poisoning whole races of animals at once. The second is a negative, but not less instructive one: it shows nature not availing herself of the resources of chemistry to maintain life without the infliction of pain, but preferring to make animal existence dependent on suffering and death.

It is a great defect in the works of Dr. Prout and Professor Fownes, that examples of physical evil, such as we have supplied, are not furnished, or taken into consideration, in their discussion of the argument for design. Thoughtful young men, struggling to attain right views of God, who will be the most earnest readers of these, and similar volumes, may be delighted with their science, but will soon perceive the one-sidedness of the view maintained. It is the "evil that is in the world," not the good, that perplexes us; and we rise with something like a sense of a wrong having been done us, from books which, instead of helping us to an understanding or explanation of that evil, quietly ignore it, as if non-existent or non-important, and boldly insist on our declaring that "all is very good." Natural and revealed religion are alike exposed to contempt by such treatment of the former, and the disappointed and provoked student is driven to the somewhat excusable, but unjust conclusion, that natural theology cannot in any satisfactory way dispose of the evil that perplexes its discussions, and is in consequence compelled to thrust it out of sight. Those who come to this conclusion, often cease to put faith in the argument from design at all.

It is in treatises on the physical sciences that the defect we are lamenting is most liable to

occur; for psychology and ethics cannot possibly be discussed without compelling the consideration of evil as well as good; but pleasant, readable, and most instructive volumes may be written on any one of the physical sciences, in its theological aspect, which shall, nevertheless, cleverly evade almost the mention, much more the discussion, of the real or apparent failure of beneficent design.

We long to see physico-theology treated in another way. It would set many an anxious mind so far at least at rest, to know that science honestly and deliberately acknowledged the existence of evil, even though it left it an utterly unexplained mystery.

We cannot enter here into a discussion of what physical science can do, in the way of solving the enigma. We desire only for the present to turn the attention of the students of physics to the dark, as well as to the bright side of nature, and to crave them to offer us their views on the former, as well as on the latter. Nevertheless, a word may be added, for the sake of our readers, as to the bearing which the existence of physical evil has on the cogency of the argument from design for a beneficent God.

The coexistence in this world of life and happiness with suffering and death, leads directly to two questions—do animal happiness and animal suffering flow from the same source? Is an evil as well as a good being at work in the world?

In ancient times, and in different countries, a sect existed, known best to us by the title of Manicheans, who held that an evil as well as a benevolent power had a share in the control of all things on this earth. By those holding such a view, all the evil would be referred to the Caco-demon, or malignant agent, and all the good to the Agathodemon, or good being. The Indian, Persian, Egyptian, and later Alexandrian schools were full of this doctrine. The greatest men of antiquity, however, held no such view, but referred the evil and the good to one source, counting the former either a result of the necessary imperfections of the world system, or acknowledging it to be a mystery inexplicable. We refer to such opinions, because we think that it is very difficult for us, who consciously, or unconsciously, have had all our notions of God modified by what we have learned of him from the Bible, to be certain what conclusion we should have come to, if we had not enjoyed the benefits of a direct revelation. We are certain, however, that science lends no support to a Manichean doctrine. The evil and the good in nature are inextricably intertwined, and cannot be unravelled or disentangled from each other. What is evil in one aspect is good in another, and the two must be taken together, and dealt with as a whole.

We have no apprehension, accordingly, that the deepest study of any of the physical sciences will lead to the conclusion that this earth exhibits the results of divided counsels, or that such a lesson will ever be taught, as that the happiness of the lower animals is an expression of God's will,

and their sufferings the contrivance of some antagonistic evil demon. All science, we believe, will, with increasing distinctness, join in proclaiming, with Revelation, that "the earth is the Lord's and the fulness thereof." It will then only remain for science to make the fullest proclamation that evil exists, and the frankest confession that she cannot account for it. A dark reality is often more tolerable than a grievous doubt; a hopeless mystery disturbs the spirit less than a difficult, though quite soluble, problem. There are many excellent people afraid, in the face of our natural theologies, to say that physical evil exists, lest they should be thought to impeach God's goodness, and yet troubled by the conviction that evil there is. Let such be emancipated from their bondage, by hearing the student of physical science *ex cathedra* declare that in this world there is "shade" as well as "sunshine;" and for those who never could be cheated into the belief that evil was not, or was good, and who stand astonished at its existence, let there be reply also. So long as men look upon the origin and existence of moral or physical evil as a problem which can be solved by logic, they will struggle to the very death to reach the solution; but when they discover that in this world a solution of the difficulty cannot be attained, they will cease to combat with it, and transfer it from the region of the intellect to that of the heart, as a sad and solemn mystery which, with closed lips, will haunt them to their graves.

Let such hear science acknowledge, that if Plato and Socrates, Aristotle and Galen, could find no plummet able to reach the depth of the mystery of the existence of evil, Newton, Laplace, Herschel, Dalton, or Davy, have not been able to add one inch to the fathom-line, or make it go deeper. They may then, after looking the existent evil in the face till they cease to fear it, perceive that it does not swallow up the good or reduce it to zero, but simply disturbs and perplexes it; but whether they reach this conclusion or not, let the truth be plainly spoken and acknowledged frankly made, that after all our natural theologies and prize essays, our eight commissioned Bridgewater Treatises, and ninth volunteered one, physical science must acknowledge that suffering is an enigma which she cannot unriddle. Chemistry, for example, can prove that God is light, but not that "in him is no darkness at all;" she can show that God *has* love, but not that he *is* love. Before that can be demonstrated to us, to borrow a beautiful idea of Bacon's, we must pass from Vulcan to Minerva: we must turn our backs upon physics and upon all human science, and gaze in another direction, ere we shall be able to affirm that "the darkness is past and the true light shineth," or comfort ourselves with the assurance that "life and immortality are brought to light." The mystery of pain will haunt our whole lives, and will probably never be felt so keenly as when we are tasting the bitterness of death, and are about forever to exchange the pangs of this life

for the unknown conditions of the life to come. Meanwhile, we are certain that God's benevolence is as infinite as his other attributes, and cannot doubt that some great purpose is served by the suffering of innocent animals. It may yet be given to us to know what it is. And even in this world, all who believe in revelation may contemplate with a joyous eye the good that is in it, and adjourn the explanation of the evil as something traversing, but not neutralizing or annihilating its opposite. Suffering and death may veil, but do not blot out an all-merciful God from our view. The curtain is thick, but light shines through, and words of hope are uttered to all who have ears to hear them. "Be still, and know that I am God." "I form the light, and create darkness." "I make peace, and create evil." "I have created the waster to destroy." "I will swallow up death in victory."

From the Spectator.

THE TRUE ENGLISH SUMMER.

THE conventional winter and summer of England do not correspond with the natural seasons. Something like the discrepancy between the statements in the almanacs and the actual phenomena of nature which was creeping in before the reform of the calendar, only on a larger scale, may be noted between our business and our weather seasons. The natural winter of England ends at the latest in June. This year the conventional winter has lasted till the end of August; and the winter of London society will not commence till after Christmas, be the weather what it may.

At bottom there is always some substratum of a natural cause for the most wayward extravagances of society. With a little pains, a plausible defence might be set up for the hoops of Queen Anne's day or the trunk-hose of Dutchmen of the olden time; and our modern habit of inverting the order of nature, and not only calling summer and winter respectively by each other's names, but using them as we call them, admits of a reasonable apology.

On an average, the latter months of the year in England are far pleasanter than the early. We would not depreciate the fascinations of the young spring, on those rare occasions when May really is what poets call it; nor do we shrink from the most fervent caresses of June, when June is what it ought to be. But the truth is, that the young year in England is like most young people—very charming when in the mood, but wayward and capricious, and not to be relied upon as a uniformly agreeable companion. Cleopatra was verging towards forty when Mark Antony, free to throw the handkerchief to the younger beauties of the whole world, lost the world and all for love of her; and Othello when he charmed Desdemona was declined into the vale of years. So it is with our English seasons. The earlier months have their intermitting bursts of dazzling, overpowering beauty; but it is rarely before September or the close

of August that the year ripens into that full development, uniformity, and equability of beauty, that can tempt a prudent man to make a constant associate of it.

Hence our Anglican inversion of the order of nature. All who have the power of choice make the less friendly months the time of their resort to cities in pursuit of business and such pleasures as cities yield. The months in which the open fields can be most fully enjoyed are devoted to the country. The fresh and tender green of May, the opening flowers, may tempt men for a day or two from the smoky and jostling streets; but a week of inclement weather follows, warning them not to be too hasty in relinquishing the snugness of town and its in-door resources. The heat of the dog-days makes them languish for leafy shades, and brooks inspiring a sense of coolness by their very sound; but the weather is still capricious, and it is felt that there is no hurry. Men dally on the verge of the country in spring and summer as bathers dip their feet in the water and draw back with a shiver, unable to muster courage for the plunge. But the steady settled weather of early autumn presents attractions irresistible, and the mysterious, half-sad charms of the waning year are as tenacious of their hold as bird-lime. Day after day is added by the fascinated sojourner in the country, till he awakens to a consciousness that Christmas is already past, and hurries back to town, with its ledgers and committees, its throng of business, legal, political, and commercial, and its splendid but jading pursuit of nocturnal pleasure. Autumn and early winter—gorgeous in show, with their bracing yet not ungenial atmosphere, are indeed the health-giving and pleasurable seasons of England; but it has been settled once for all that summer must be delightful and winter dreary; so we agree to call the season we like best by the name most redolent of agreeable associations.

There is no season that for substantial, unalloyed enjoyment can surpass the legitimate September and October of England—such a September as we are now favored with. There is a peculiar beauty about the thin silvery ground mists of early morning, with the long transparent spider-threads floating suspended in them, and in the thick dew on grass and bush reflecting all the prismatic colors. There is a charm unspeakable in the deep violet tints of the earth which immediately precede the sunset, in the broad belt of orange which follows the sun's disappearance, dying away upwards through delicate green into the pure blue flecked with a few light glads of vermilion or purple. And the slumberous stillness of mid-day, with its attenuated warmth, is inferior to neither. The golden-yellow of the stubble-field, and the rich browns of the fallows, are rapidly giving way to the unrivalled perennial green of England's fields and meadows; the trees, though less luxuriant in their foliage, are green still, but with here and there sprinklings of autumn's tints, like the first grey hairs mingling

with the dark of a man in the pride and power of life; the gorgeous dahlias, and other flowers which reserve themselves to crown the ripened year, with the abundant mellow fruitage, enrich the shrubbery. Nature has reached the acme of beauty; the air is bracing and enlivening; and the short trill of the red-breast has an inspiring influence that rivals, in its way, the more prolonged and luscious notes with which the nightingale lent life to the earlier year. The characteristic of the season is subdued cheerfulness and full power of conscious action; it is bustling, effective, self-regulating life.

All animated nature is on the alert and working, undepressed by lassitude. The wain with its high-piled vegetable stores grates beneath the hedgerows speckled with alternate sun and shade; the ploughshare flashes in the sun as it turns the furrow; the sportsman presses briskly on, where his sleek pointer now appears, now disappears, as it follows the tainted gale through the luxuriant green crops; the whistle and shout of the rural laborer, the dropping shot of the sportsman, the choral laugh of happy idlers, and the lively din of autumnal birds, blend and intermingle. The sea-shore with the wide expanse of waters sparkling in the sunlight, the breezy mountain-top with glen and corrie seen in rugged grandeur far below, the undulating plains where tillage alternates with woodland, all have their peculiar beauties.

There is a vigorous freshness in the season, which sympathizes with the practical self-possessed character of Englishmen, and perhaps helps to inspire it. All our favorite athletic sports can now be pursued without impediment from storm or oppressive heat. And hence it comes that Englishmen do and will continue most to affect the country at the period of the waning year. Let other peoples rejoice in the season of flowers, the season of fruit for us. The rich beauty of harvest yields us most content; the sharp bite of ale-brewing October has charms for us; and there is a strange attraction in the season of hoar frosts, when clusters of icy needles, flashing in the sun, have nipped the garniture of leaves on our oaks and elms. As jolly fellows make night their day, so we make autumn and winter our spring and summer. When at last forced back to town, we leave even the bare, bleached, drenched wintry fields, with as much lingering reluctance as Falstaff left his tavern, at what others would have called an unseasonable hour, muttering, "Now comes in the sweetest morsel of the night, and we must hence and leave it unpicked."

From the Spectator, 23 Sept.

THE WEEK.

It comes: the cholera keeps its steadfast path across the world. That which seemed an abstraction in the remote regions of Turkey or Russia, becomes a tangible reality now that it is in the countries nearest to us: it holds possession of

commercial Hamburg, and has actually entered the capital of fashion, civilization, and revolution—Paris. It cannot be kept back, like the armies of the greatest human potentates—no Thermopylae will hinder its path; nations cannot fly from it. The only safety is in a spirit of patient courage, of careful but cheerful vigilance. It behoves all to be diligent in their appointed duty, and then to accept the result with perfect trust.

The executive has obvious functions; which, it is to be hoped, will be performed in a spirit of zeal proportionate to the need, and altogether disproportionate to the faltering conduct of its legislation. Even from the patchwork legislation of the past session, we shall derive some advantage.

For its part, the public must not rely on the nostrums of well-meaning ignorance: the authoritative advice of our appointed sanatory commissioners has been issued both in London and Dublin, which is trustworthy, reassuring, and distinct. There is no occasion for panic. The commissioners seem to have established these facts—that the disease is non-contagious, so that no danger for the attendants lurks at the bedside of the sufferer; that the early stage is easy of cure; but that all who are seized with symptoms suspicious or even equivocal, should at once invoke the aid of duly-constituted medical advisers. It appears to be probable, that with the simple observance of such rules as common sense will dictate, any one *may* escape; and that if the bulk of the people can but do as they are bid in this matter, the storm may pass over the land comparatively harmless.

Not so easy is it to prognosticate a favorable passing of the political storm of continental Europe. The gale rises again; discord revives; and a new resort to arms appears to be imminent.

In France, the contradictory results of the Seine elections point to nothing but troubles and danger, from the wavering state of public opinion. The ministerial head of the state shakes with the quickening of the political breeze, and signs of instability appear in opposite quarters. They are visible as well in feints of resignation, deprecated and prevented by officious friends on the very steps of the half-ascended tribune of the Assembly, as in the reports, vouched and believed by the well-informed, of the ruling party's intention to cement its power and secure the republic by a sleight—by electing General Cavaignac to a preliminary but not provisional presidency.

The central government of Germany is contending with a new revolutionary movement, consequent on the absence of sufficient authoritative power either at Frankfort or Berlin, and the conflict of opinion between parties whose relative strength is undecided. The General Assembly has negatived, by a narrow majority, a proposal to reject the Schleswig-Holstein armistice and continue the war; the minority has appealed to the mob in the streets; and while the government is not fortified by any positive sanction, the question so maladroitly brought before the chamber is trans-

ferred to the arena of revolution. The anti-Danish spirit has aroused an anti-regal spirit; democracy gains strength in the tumult, and the dispute of the treaty may end in a war of republicanism and monarchy of which none can foresee the end.

The ministerial crisis at Berlin continues, with no appearance of a probable solution; and the application of revolutionary principles—the principles of political disorganization—to the management of the army, has produced an effect that might have been expected, in the relaxation of discipline. The efficiency of the army is enfeebled by the Berlin democrats; while the Frankfort democrats are doing all they can to make the efficiency of that army an object of necessity, by hurrying Germany into war.

Vienna is another scene of crisis. A section of the Diet is struggling to extort from ministers a distinct explanation of the course pursued in Italy. A reactionary movement is understood to be at work in the imperial court: the Austrian liberals, perceiving probably how much their interests are identified with those of Italy, feel a new sympathy with the Italians, and hint at a disavowal of the old "Metternich treaties." In the mean time, popular tumults have arisen out of casual circumstances, which have grown political and revolutionary, and weakened the government, even while it succeeded in suppressing them.

War rages in Sicily; it threatens to revive in Lombardy. Messina, bombarded by the Neapolitans, has capitulated. Stories have come that the city was converted into a trap by the citizens, and was blown up by its retreating defenders; and that the Messinese went back to massacre the Neapolitans. Should this be true only in part, it will probably abolish every trace of that jealousy which the Sicilians feel generally for Messina as a privileged city directly attached to Naples. Sicily has not yet achieved her independence, but it seems impossible that she should again submit to the rule of the Neapolitan Bourbons.

The Anglo-Gallic mediation has had no additional light thrown upon it. Suspicions are entertained as to the intentions of Austria, whose court betrays such evident signs of reactionary intrigues. Meanwhile, King Charles Albert is refitting his army, and issuing brave-sounding proclamations.

INTELLIGENCE, upon the authority of which it is said the utmost reliance may be placed, has reached Dublin, that the British government has been foiled in its negotiation with the Holy See to affect an amicable adjustment of the Irish "Godless" Colleges question; that, in fact, the pope has "pronounced" against the scheme, and in favor of the objections raised against it by the turbulent titular of Tuam. According to the same authority, the "Great Reformer" has also put his veto upon the diplomatic relations with Rome bill.—*Dublin Correspondent of the Times, September 16.*

EXPERIMENTS were made on Friday last with Mr. Bakewell's copying electric telegraph, between

the Electric Telegraph Company's station in Seymour street and Slough; which, we understand, proved very satisfactorily that the same amount of power required for working the needle-telegraph is amply sufficient for the copying process. Copies of the written messages were made on paper with a single wire, and at double the speed of transmission by the ordinary needle-telegraph; though, with the small model instruments employed in the experiments, rapidity was not attempted. With larger and more accurately constructed apparatus, we hear that Mr. Bakewell expects to be able to copy 800 letters of the alphabet per minute.

SUPPRESSION OF BURIAL CLUBS.—The burial societies act as a popular incentive to infanticide, and the *Times* is engaged on an effort to write them down. The cost of burying the child, to a working man, ranges from twenty to thirty shillings; the burial clubs allow three or four pounds, and sometimes even five pounds; so that the surplus is a direct premium on the death of a child. Cases are frequent in which children are insured in several clubs: one is mentioned in which the father of a child ten months old, insured in three clubs, received twenty pounds; in another case a man had made payments in nineteen different burial clubs. At this rate, the responsibilities of having a family are neutralized; for it is evident that such payments will cover all past charges, even to the midwife's fee; and that it becomes a more profitable trade to breed sucking children than pigs or poultry.

The *Times* would prohibit and abolish burial clubs: and while such disclosures are made, many will echo the suggestion. Yet, forasmuch as we must not presume that the child-murderers really constitute more than a very small fraction of the population, it would evidently inflict a great hardship on the poor to deprive them of mutual aid against casualties. It is to be remembered that the well-disposed parent has more to provide than the mere cost of interment—a trifle of mourning and other incidental charges, which even the largest allowance named would not more than cover. To such persons, who are no doubt the vast majority, the simple prohibition of burial clubs would be a true grievance. Let us suggest to those skilful in practical adaptations, a modification of the objects of the clubs. The insurance might be for a decent burial, and not for a sum wherewith to bury. The rivalry of the clubs would keep up the sumptuary standard of burial in favor of the public. But if the clubs be put down, something ought to be substituted for the aid they afford; and it would not be difficult to find a substitute. Death is a lot to which all are subject—the tax of death is universal; and a compensatory provision for burial, if universal, would be a charge felt by none because of that universal pressure. To dispose properly of a dead body, is of more concern to the public than it is even to individual survivors. The fit substitute for the aid of burial clubs might be, a law estab-

lishing the right of every person that dies to decent interment at the public charge. Not a *pauper* funeral, since it would be a funeral for those who are not paupers. But the public should undertake the interment of every person deceased, as a public duty, performed on demand for all alike. Relatives who pleased, or sturdy citizens who deemed such state help to be *too* paternal, might, of course, perform the duty at their own charge. But if you take from the poor the right of interment according to the arrangements best suited to provident poverty, you are bound to supply a simple and not a derogatory substitute.

SLIGHT MISTAKES.—M. Babinet disputes M. Leverrier's planet. The young astronomer, it seems, thought he had discovered a planet, but it turns out to be another which somebody else had discovered. There is a formidable discrepancy, according to M. Babinet, between the discovery and the thing discovered. M. Leverrier perceived a planet at a distance from the sun thirty-six times that of the earth, whereas the planet discovered is only thirty times that distance; M. Leverrier's globe is thirty-eight times the size of the earth, the planet discovered is about twelve times; in its orbit, M. Leverrier's takes two hundred and seventeen years to make both ends meet, the other takes but a hundred and sixty-four years. It seems to us that the actual planet is a paltry affair compared to M. Leverrier's; so that he is well quit of it, we should say.

But after all, we do not see that these discrepancies very gravely affect the discovery. M. Leverrier found out that there must be a planet, and there is one; what would you have more! It is, possibly, two hundred millions of leagues off the place assigned to it; but what then? what is two hundred millions of leagues? As to the duration of the Neptunian year, and the bulk of the globe, it was, we suspect, but the indiscretion of talking big about it; which may easily be pardoned in so young a man. We do not see why M. Babinet should quarrel with the planet that he has got, on these slight grounds. A planet in hand is worth two in the vast unknown, although it is such a little ball with such a little hoop of an orbit. M. Leverrier confesses that he magnified his discovery; and although it is no such great affair as people were led to suppose, we must say that quite enough remains to do the young man great credit. Besides, to say nothing of the residuary planet, M. Leverrier has at least discovered a good berth with some 600*l.* a year; which he will probably regard as a satisfactory set-off against the curtailment of his planetary dimensions. We wish all young men could show as much for their education.

By the by, if M. Leverrier's prize is revoked, what becomes of Mr. Adams, who had drawn the next number?

This dispute about a planet is an incident that ought to be instructive to us all. How positive we are about things the most small, recondite, and obscure! Here is a thing big enough in all con-

science, standing forth in view of the whole universe; yet men are debating where it is—barely agreeing that it exists at all, and confessing to an error in fixing its whereabouts equal to hundreds of millions of miles. Every respectable telescope in Europe is foiled in declaring where this considerable piece of goods is; and yet we undertake to expound universal laws, and settle the bounds between "right" and "wrong."

From the New York Observer.

MADAME PFEIFFER.

Oroomiah, Persia, Aug. 3, 1848.

MESSRS. EDITORS—A few evenings ago, a knock at the door of our mission premises was soon followed by the quick step of a native, who came to Dr. Wright with the statement that there stood in the street a woman, who knew no language, and was entirely unattended, except by a Koordish muleteer. A moment afterward, another native came with the additional statement, the lady is dressed in English clothes, and she says in your language, Will you give me a little water?

Dr. Wright, whose curiosity and astonishment could hardly be otherwise than highly excited, by the announcement of a lady in European costume, speaking English, in the street, at night, and unattended, in this remote, barbarous land, where the appearance of a European man is a thing of very rare occurrence, soon had ocular proof of what his ears were so reluctant to admit—a bona fide European lady standing before him, having a letter for Mr. Stocking from an acquaintance of his at Mosul, which introduced to us Madame Pfeiffer, of Vienna, who had performed the circuit of the world, thus far, alone, and was now hastening toward her home.

Who, then, is Madame Pfeiffer? She is a German lady, fifty-one years old, of great intelligence, and most perfect accomplishments, and, to appearance, thoroughly sane on every subject unless it be her style of travelling, which is at least somewhat peculiar.

Madame Pfeiffer, leaving her husband and her two sons, (one of them an officer of government and the other an artist,) about two years ago started on her tour around the world. An aged gentleman of her acquaintance accompanied her for a short time; but finding that she was obliged to protect him instead of his protecting her, she left him and proceeded entirely alone.

From Europe, Madame Pfeiffer went to Brazil, where she admired the brilliant flowers and the magnificent forests more than almost anything else that she has seen, and where she came very near being murdered by a black ruffian, who attempted to rob her. She still carries the scars of the wounds then received, but states, with evident satisfaction, that she had cut off three of his fingers, in self-defence, when several persons providentially came to her rescue. She had intended to cross the continent, from Rio to the Pacific ocean; but finding things in too disordered a state to admit of it, she took passage in a sailing vessel at Rio, in which she doubled Cape Horn, and went to Chili; and after a short stay at Valparaiso, she took passage in another vessel for Tahiti, where she made an agreeable visit, among the mementos of which she has Queen Pomare's autograph.

From Tahiti, our heroine traveller proceeded to China, where she visited several of the points most

accessible to foreigners, mingling socially with the missionaries there, whom she mentions familiarly by name, as Dr. Bridgeman, Dr. Ball, Mr. Gutzlaff, &c.; the autograph of the last named of whom she has in Chinese. One of the strongest impressions which she seems to have brought from the "celestial empire" is, the imminent insecurity of foreigners at Canton.

From China, Madame Pfeiffer went to Calcutta; and from that city, she travelled overland, across British India, to Bombay, passing through a great variety of *hazards* and adventures on the way, and *holding* *mutual* pleasant intercourse with Protestant missionaries, (though herself born and educated a Catholic,) at various stations and of different nations.

From Bombay, Madame P. went in a steamer to Bussorah; and thence, in another steamer, up to Bagdad; and from Bagdad, she travelled in company with a caravan up to Mosul, as a memento of which place she has a sculptured figure of the human head, taken from the ruins of ancient Nineveh. From Mosul, she crossed the formidable Koordish mountains to Oroomiah—a caravan journey of twelve days, (but protracted, in her case, by tedious delays, to twenty days,) in company with a Koordish muleteer, on a route of greater exposure, humanly speaking, than any other she has travelled during her circuit of the world.

After a visit of one day with us, which we all wished could have been longer, Madame Pfeiffer hastened on toward Tabreez, intending to go thence through Georgia to Tiflis, and thence across the Caucasus, through European Russia, to Vienna, hoping to reach her home about the first of November.

The adventurous circumstances of Madame Pfeiffer, during many parts of her tour, invest it with the most romantic and thrilling interest. Think, for instance, in her passage across the wild Koordish mountains, of a savage Koord pointing to the tassel on the Turkish fez (cap) she wore, to which he took a fancy, and demanding it of her by the significant gesture of drawing his hand across his throat—meaning, of course, "Give me the tassel as you value your head;" and she, in turn, repelling the demand, by gestures, unable to speak to him a word orally, in any language he could understand. Through many such adventures she made her way safely to Oroomiah, carrying about her person a large sum of money, (by accidental necessity rather than choice,) over the wild regions of Koordistan, in a manner which seems to us truly marvellous. Her practical motto is, never betray fear; and to her strict adherence to that, she expresses herself as greatly indebted for her success in travelling.

On the road, Madame Pfeiffer, in these regions, wears the large veil, concealing most of the person, which is commonly worn here by native females, when they go abroad, and rides astride, as they also ride; but her other garments, (with the exception of the Turkish caps above named,) are sufficiently European, in appearance, to distinguish her from natives. Her language, on the way, in these lands, is wholly the language of signs, dictated by necessity, and which she seems often to have made very expressive. On the last day's ride, before reaching Oroomiah, for instance, the stage being two ordinary stages, and the muleteer, at one time, proposing to halt till the next day, she would rest her head upon her hand, as emblematical of sleep, and repeat Oroomiah; and when the muleteer, from regard to

his tired horses, still insisted on halting, she added tears to her gestures; and the obstinate Koord's heart, according to his own statement, was then irresistibly subdued—so much so, that he went promptly and cheerfully. Her helplessness and dependence, on well known principles, did much, doubtless, at once to win for her kindness among the bloody Koords, and ward off danger. Madame P. has, however, intrinsic elements of a good traveller. Though she had rode, on the day she reached Oroomiah, almost incessantly, from 1 o'clock, A. M., till eight o'clock, P. M., at the wearisome rate of a caravan, over a very dry, hot, dusty region, a distance of near sixty miles, still, on her arrival, she seemed little tired—was buoyant and cheerful as a lark, (which is probably her habitual temperament,) and was quite ready, the next day, (the only day she stopped with us,) to take a pleasure ride on Mount Seir.

Madame Pfeiffer occupies but a single horse on her journey; her small trunk being slung on one side of the animal, and her scanty bed on the other, and she riding between them. Her fare, on the road, moreover, is extremely simple—consisting of little more than bread and milk—a regimen not more convenient to the traveller, on the score of economy, than conducive, as she says, to her health, and certainly to her security. To those who may be curious in regard to the expenses of her tour round the world, I may repeat her statement, that she had expended, when here, just about one thousand dollars.

A passion for travel is the ruling motive that carries Madame Pfeiffer so cheerfully and courageously through all her manifold hardships and perils. She, however, has minor objects, makes large collections of insects and flowers. She is already an authoress of some celebrity, having published a work on Iceland, and another on Syria and the Holy Land, the fruits of her earlier travel; and the copious notes and observations which she is making, during her tour around the globe, will, of course, in due time be given to the world. "A small affair," she pertinently remarked, "would it have been for me to sail around the world, as many have done; it is my land journeys that render my tour a great undertaking, and invest it with interest."

Madame Pfeiffer expressed her purpose, after visiting home and resting a while, of taking North America in her next tour. Possibly, this female Ledyard will meet with some, in our native land, under whose eye this notice may fall; if so, we would bespeak for her their kind offices, and pledge them, in return, a rare entertainment in making her acquaintance.

As ever, very truly yours,

J. PERKINS.

The Poems of Samuel Taylor Coleridge, with an Introductory Essay on his Life and Writings. N. York. C. S. Francis & Co.

AN undertaking something similar to the present was suggested by Leigh Hunt, in one of his many suggestive volumes, to wit, a pure selection of the Coleridge poems, perfect in form, and distinguished by the highest poetic traits. This is now done in an exceedingly elegant volume, published in a style worthy the original Pickering edition by Francis. It is a book to be in constant demand while youth and woman, or pure and high-minded thoughts in any, survive in the world.—*Literary World.*

From the N. Y. Observer.

TREATMENT OF CHOLERA.

Constantinople, Aug. 27, 1848.

THE cholera is still making dreadful ravages in various parts of Turkey, as well as in some portions of Europe. Mysterious disease! that stretches its gigantic arms from the Red to the White Sea, and at the same moment of time, kills, as in a moment, its hundreds and thousands in Cairo, in Constantinople, and in Petersburg! And thus it moves onward, and onward, and onward, towards the west, awakening the most gloomy forebodings in nations and countries yet unreached, while it leaves desolation and sorrow behind! Quarantines and milito-sanitary cordons are instituted in vain. They have again and again been proved to be most perfectly useless in staying the march of this dreadful pestilence. No quarantines nor disinfecting agents can be of any avail, unless you can adopt means so general and powerful as to change the character of the whole atmosphere around us. There can scarcely be a doubt that the Asiatic cholera, as it is called, depends upon a specific cause, and that that cause is in the atmosphere. Recent observations seem to show that the electric or magnetic fluid has something to do with it. This is a point upon which some light may be thrown in America, should the disease invade that country, as now seems most probable; for the electric telegraphs in operation there are more numerous than in any other country in the world; and if, as has been asserted in Europe, the cholera atmosphere affects these instruments, the fact must surely be observed in America.

The cholera has now existed in the city of Constantinople for nearly one entire year; though much of the time it has been of a mild type, and limited in extent. Within the last month, however, it has shown more malignancy than at any former period, and during one week nearly all who were attacked, died. The number of deaths in the city, from cholera alone, during that week, was reported at 1,100. At the same time, the disease has been raging at Broosa, Nicomedia, Adabara, Magnesia, Urntab, Aleppo, and various other places in the interior. Trebizond was dreadfully visited a year ago, and now the disease has returned with such violence as to drive almost everybody from the city that had the means of fleeing. It has just begun its ravages at Smyrna, where it is to be feared it will be particularly severe. As I have intimated, this scourge of the human race is moving westward. It will doubtless by and by be heard of from France and England, and then it will cross the Atlantic, as before, to perform its direful mission in America.

My principal object in introducing the subject into this letter is to communicate some facts concerning its treatment, which have been learned by experience in this part of the world, and which, though they may not be new to professional men in America, may tend to corroborate what they have already observed and heard on the subject, while those of your readers who are not versed in

medical science, may have their minds quieted somewhat, in knowing that there are precautions which, under God, will in most cases secure safety, even in the midst of the greatest exposures.

The Asiatic cholera, which when fairly seated is one of the most unmanageable of all diseases—despising all human art and skill, and mocking all the assiduities of friendship, in almost all cases begins with a *mild diarrhæa*, which in that stage is most readily cured. True where the cholera is raging we are continually hearing of persons who arose well in the morning, and are in their graves before night; and it is not to be doubted that there are some cases in which the very first attack is the *collapse*, from which recovery is rare. But I can say with truth that in every instance, of these sudden deaths of cholera, in which I have been able to investigate the circumstances, I have found that the individual had been laboring under *diarrhæa* for some days previous. Generally this is so slight as not to be much noticed; it is attended with no pains, and no sickness of stomach, perhaps, and gives the person no particular inconvenience. But it is this very diarrhæa which is insidiously preparing the system for the most dreadful onset of disease. Whenever the cholera is prevailing in any place, it should be a rule, in every instance, to stop even the *slightest diarrhæa immediately*. For this we have a remedy always at hand. Opium, in some form or other, must be used *immediately*, and without fear. In the form of laudanum, perhaps it may be used most conveniently. At such times it should be found in every house; and the master of the family should give the strictest injunction to every inmate of his house, to give *immediate notice*, if attacked with diarrhæa. In mild cases *six drops* of laudanum for an adult will be sufficient to check the disease. The dose should be repeated *every four hours, until the diarrhæa is stopped*. This is a most important direction. In severe cases of diarrhæa a larger dose must be used, and the dose may be increased indefinitely without the least injury, so long as the effect of *checking the diarrhæa* is not produced. I have been called to prescribe in a great multitude of cases of cholera, in this incipient stage, and I have found every one of them to yield to this medicine. The prescription is one which our good brother Doctor Smith left with his brethren in Turkey in anticipation of the cholera, when he was returning to America; and by the blessing of God I do believe it has saved thousands of lives. Our native brethren in Nicomedia and Broosa having been instructed on the subject by Dr. Smith, have been exceedingly useful as instruments of checking the disease in a great multitude of cases. Many even of their worst enemies among the Americans have flocked to them for this medicine, and having proved its virtues have become their best friends.

I have used with the best effects, in many severe cases, when there was much pain, and tendency to cramps, and coldness in the extremi-

ties, a mixture of equal parts of *Laudanum*, *Tincture of Rhubarb* and *Tincture of Camphor*. Of this, *eighteen drops* may be given for an adult at a dose, in mild cases, to be increased according to circumstances. Of all epidemic or contagious diseases none excites more general alarm than the malignant cholera, and yet I know of none that gives such timely premonitions of its approach, and that is so perfectly under human control (so to speak) as this is, in this early stage.

Of course, when there is a tendency to diarrhœa in cholera times, the strictest attention should be paid to diet, and fruits and crude vegetables should be carefully avoided. Wherever the cholera prevails, it has been found that most people are easily inclined to bowel complaints, and this is an indication that the diet of people generally should be regulated accordingly. A sudden change from a generous to a low diet in such circumstances has been found quite injurious. A person who is well should continue to eat very much as he has been accustomed to, except that most people eat *too much*, as a general rule, and except that fruits and certain vegetables, which at other times would be harmless, under the cholera atmosphere are apt to produce diarrhœa.

I will close my communication, by giving some particulars of two or three cases, under many that have come under my own observation, to illustrate what I have said above. I was awakened one night about midnight by two of my own children—one 15 and the other 13 years of age. They had both been suddenly attacked with diarrhœa and vomiting, accompanied with the severest pains, amounting almost to cramps, in the stomach. The cholera was prevailing around, and, of course, I had the greatest reason for apprehension that this was a sudden attack of this disease. I administered immediately full doses of the mixture mentioned above, repeating it every two hours as long as the symptoms continued urgent. I gave also the oil of peppermint, and repeatedly applied the spirit of camphor, with friction, to the region of the stomach. The next day they were both well again, excepting of course some debility from the preceding night's attack. They had both eaten freely the day before of a dish of stringed beans, and I remarked that each upward evacuation of the stomach, brought with it some of these beans, in precisely the same state in which they had been eaten twelve hours before.

A European merchant of my acquaintance residing in Galeta, arose one morning, and took a sea bath, as he was accustomed to do. He then attended to various matters of business, which required him to walk several miles back and forth in this city. He returned to his lodgings quite ill, sometime in the forenoon, and before night of the same day he was a corpse, having died of a most violent attack of cholera! This case was reported as one of death almost on the very first attack, but I ascertained, on inquiry, that this individual had been suffering with diarrhœa for eight or ten days previous!

A Protestant American was very violently attacked one night, with what his physician called "the most awful case of cholera he had ever witnessed." He died within twenty-four hours! The facts concerning the case, however, are these. He had had a similar attack two or three weeks previous, and had been cured, by the blessing of God, on the remedies mentioned above. The day before his second attack, while he was still weak from the first, he walked many miles and became very much fatigued, and certain circumstances had also very much agitated his mind. He ate a hearty meal in the evening, partly of beans and meat, which no doubt was the immediate cause of the attack; and after the diarrhœa commenced, nothing was done to check it for several hours, and when at last a physician was called, it was too late!

Fain would I hope that our beloved country may be saved from the ravages of this scourge;—but this can hardly be expected. It will probably come, and come to many, "as a thief in the night," although the warning has been long and loud. The class of people among whom it makes its greatest desolations, are those who use habitually the intoxicating cup. I don't know that even the strictest attention to the rules I have given above, will avail to save the drunkard, when he is once attacked. When the seeds of this disease are cast into such a man's system, it is like striking fire into a box of tinder. The whole internal coatings of his stomach, besides other vital organs, are already diseased, and he is a subject of which the cholera will make very short work. It makes one shudder to think how many drunkards will be suddenly ushered into eternity by this dire disease!

Many who are esteemed temperate in these habits, will also fall. God designs this as his scourge upon the nations; and let it be our prayer that the nations may be led thereby to repentance. Of how many sins is our own nation guilty before God! and how little is thought of them, and felt for them, and how rarely are they confessed! Let us imitate the godly Ezra and Nehemiah in confessing, not only our own sins, but the sins of our people—of our whole country, and like them, let us plead with God for his pardoning mercies and that he will avert his threatened wrath from us.

I am happy to add that in some parts of Turkey, where the gospel is preached, the visitation of the cholera has been attended with the happiest spiritual results. Some who were dead in trespasses and sins have been awakened thereby; some enemies have been made friends; and the Holy Spirit is now evidently striving with the hearts of some who have heretofore shown the most stupid unconcern, in regard to the things of eternity. May such fruits abound more and more, through the working of God's mighty power.

I remain, gentlemen,

Very sincerely yours,
H. G. O. DWIGHT.

CHAPTER VII.—VOGEL ISLET.

Who was ever happier than Rolf, when abroad in his skiff, on one of the most glorious days of the year! He found his angling tolerably successful near home; but the further he went, the more the herrings abounded; and he therefore dropped down the fiord with the tide, fishing as he receded, till all home objects had disappeared. First, the farm-house, with its surrounding buildings, its green paddock, and shining white beach, was hidden behind the projecting rocks. Then Thor islet appeared to join with the nearest shore, from which its bushes of stunted birch seemed to spring. Then, as the skiff dropped lower and lower down, the interior mountains appeared to rise above the rocks which closed in the head of the fiord, and the snowy peak of Sulitelma stood up clear amidst the pale blue sky; the glaciers on its sides catching the sunlight on different points, and glittering so that the eye could scarcely endure to rest upon the mountain. When he came to the narrow part of the fiord, near the creek which had been the scene of Erica's exploit, Rolf laid aside his rod, with the bright hook that herrings so much admire, to guide his canoe through the currents caused by the approach of the rocks and contraction of the passage; and he then wished he had brought Erica with him, so lovely was the scene. Every crevice of the rocks, even where there seemed to be no soil, was tufted with bushes, every twig of which was bursting into the greenest leaf, while here and there a clump of dark pines overhung some busy cataract, which, itself overshadowed, sent forth its little clouds of spray, dancing and glittering in the sun-light. A pair of fishing eagles were perched on a high ledge of rock, screaming to the echoes, so that the dash of the currents was lost in the din. Rolf did wish that Erica was here when he thought how the color would have mounted into her cheek, and how her eye would have sparkled at such a scene.

Lower down it was scarcely less beautiful. The waters spread out again, to a double width. The rocks were, or appeared to be, lower; and now and then, in some space between rock and rock, a strip of brilliant green meadow lay open to the sunshine; and there were large flocks of fieldfares, flying round and round, to exercise the newly-fledged young. There were a few habitations scattered along the margin of the fiord; and two or three boats might be seen far off, with diminutive figures of men drawing their nets.

"I am glad I brought my net too," thought Rolf. "My rod has done good duty; but if I am coming upon a shoal, I will cast my net, and be home laden with fish, before they think of looking for me."

Happy would it have been if Rolf had cast his net where others were content to fish, and had given up all idea of going further than was necessary; but his boat was still dropping down towards the islet which he had fixed in his own mind as the limit of his trip; and the long solitary

reach of the fiord which now lay between him and it was tempting both to the eye and the mind. It is difficult to turn back from the first summer-day trip, in countries where summer is less beautiful than in Nordland; and on went Rolf, beyond the bounds of prudence, as many have done before him. He soon found himself in a still and somewhat dreary region, where there was no motion but of the sea-birds which were leading their broods down the shores of the fiords, and of the air which appeared to quiver before the eye, from the evaporation caused by the heat of the sun. More slowly went the canoe here, as if to suit the quietness of the scene, and leisurely and softly did Rolf cast his net; and then steadily did he draw it in, so rich in fish, that when they lay in the bottom of the boat, they at once sank it deeper in the water and checked its speed by their weight.

Rolf then rested awhile, and looked ahead for Vogel islet, thinking that he could not now be very far from it. There it lay looming in the heated atmosphere spreading as if in the air, just above the surface of the water, to which it appeared joined in the middle by a dark stem, as if it grew like a huge sea-flower. There is no end to the strange appearances presented in northern climates by an atmosphere so different from our own. Rolf gazed and gazed, as the island grew more like itself on his approach; and he was so occupied with it as not to look about him as he ought to have done, at such a distance from home. He was roused at length by a shout, and looked towards the point from which it came; and there, in a little harbor of the fiord, a recess which now actually lay behind him—between him and home—lay a vessel; and that vessel, he knew by a second glance, was the pirate-schooner.

Of the schooner itself he had no fear; for there was so little wind that it could not have come out in time to annoy him; but there was the schooner's boat, with five men in it—four rowing and one steering—already in full pursuit of him. He knew, by the general air and native dress of the man at the helm, that it was Hund; and he fancied he heard Hund's malicious voice in the shout which came rushing over the water from their boat to his. How fast they seemed to be coming! How the spray from their oars glittered in the sun; and how their wake lengthened with every stroke! No spectator from the shore (if there had been any) could have doubted that the boat was in pursuit of the skiff, and would snap it up presently. Rolf saw that he had five determined foes, gaining upon him every instant; and yet he was not alarmed. He had had his reasons for thinking himself safe near Vogel islet; and, calculating for a moment the time of the tide, he was quite at his ease. As he took his oars, he smiled at the hot haste of his pursuers, and at the thought of the amazement they would feel when he slipped through their fingers; and then he began to row.

Rolf did not over-heat himself with too much exertion. He permitted his foes to gain a little upon him, though he might have preserved the dis-

tance for as long as his strength could have held out against that of the four in the other boat. They ceased their shouting when they saw how quietly he took his danger. They really believed that he was not aware of being their object, and hoped to seize him suddenly, before he had time to resist.

When very near the islet, however, Rolf became more active; and his skiff disappeared behind its southern point while the enemy's boat was still two furlongs off. The steersman looked for the reappearance of the canoe beyond the islet; but he looked in vain. He thought, and his companions agreed with him, that it was foolish of Rolf to land upon the islet, where they could lay hands on him in a moment; but they could only suppose he had done this, and prepared to do the same. They rowed quite round the islet; but, to their amazement, they could not only perceive no place to land at, but there was no trace of the canoe. It seemed to them as if those calm and clear waters had swallowed up the skiff and Rolf in a few minutes after they had lost sight of him. Hund thought the case was accounted for, when he recalled Nipen's displeasure. A thrill ran through him as he said to himself that the spirits of the region had joined with him against Rolf and swallowed up, almost before his eyes, the man he hated. He put his hands before his face, for a moment, while his comrades stared at him; then, thinking he must be under a delusion, he gazed earnestly over the waters, as far as he could see. They lay calm and bright; and there was certainly no kind of vessel on their surface, for miles round.

The rowers wondered, questioned, uttered shouts, spoke all together, and then looked at Hund in silence, struck by his countenance; and finished by rowing two or three times round the islet, slowly, and looking up its bare rocky sides, which rose like walls from the water; but nothing could they see or hear. When tired of their fruitless search they returned to the schooner, ready to report to the master that the fiord was enchanted.

Meantime, Rolf had heard every plash of their oars, and every tone of their voices, as they rowed round his place of refuge. He was not on the islet, but in it. This was such an island as Swein, the sea-king of former days, took refuge in; and Rolf was only following his example. Long before, he had discovered a curious cleft in the rock, very narrow, and all but invisible at high water, even if a bush of dwarf ash and birch had not hung down over it. At high water, nothing larger than a bird could go in and out beneath the low arch; but there was a cavern within, whose sandy floor sloped up to some distance above high-water mark. In this cavern was Rolf. He had thrust his little skiff between the walls of rock, crushing in its sides as he did so. The bushes drooped behind him, hanging naturally over the entrance, as before. Rolf pulled up his broken vessel upon the little sandy beach within the cave; saved a pile of his fish, and returned a good many to the water; and then sat down upon the sea-weeds to listen. There was no

light but a little which found its way through the bushy screen, and up from the green water; and the sounds—the tones of the pirates' voices, and the splash of the waters against the rocky walls of his singular prison—came deadened and changed to his ear. Yet he heard enough to be aware how long his enemies remained, and when they were really gone.

It was a prison indeed, as Rolf reflected when he looked upon his broken skiff. He could not imagine how he was to get away; for his friends would certainly never think of coming to look for him here; but he put off the consideration of this point for the present, and turned away from the image of Erica's distress when he should fail to return. He amused himself now with imagining Hund's disappointment, and the reports which would arise from it; and he found this so very entertaining, that he laughed aloud; and then the echo of his laughter sounded so very merry, that it set him laughing again. This, in its turn, seemed to rouse the eider-ducks that thronged the island; and their clatter and commotion was so great overhead, that any spectator might have been excused for believing that Vogel islet was indeed bewitched.

CHAPTER VIII.—A SUMMER APARTMENT.

"HUMPH! How little did the rare old sea-king think," said Rolf to himself, as he surveyed his cave—"how little did Swein think, when he played this very trick, six hundred years ago, that it would save a poor farm-servant from being murdered, so many centuries after! Many thanks to my good grandmother for being so fond of that story! She taught it thoroughly to me before she died; and that is the reason of my being safe at this moment. I wish I had told the people at home of my having found this cave; for, as it is, they cannot but think me lost; and how Erica will bear it, I don't know. And yet, if I had told them, Hund would have heard it; or, at least, Stiørna, and she would have managed to let him know. Perhaps it is best as it is, if only I can get back in time to save Erica's heart from breaking.—But for her, I should not mind the rest being in a fright for a day or two. They are a little apt to fancy that the affairs of the farm go by nature—that the fields and the cattle take care of themselves. They treat me liberally enough; but they are not fully aware of the value of a man like me; and now they will learn. They will hardly know how to make enough of me when I go back. Oddo will be the first to see me. I think, however, I should let them hear my best song from a distance. Let me see—which song shall it be? It must be one which will strike Peder; for he will be the first to hear, as Oddo always is to see. Some of them will think it is a spirit mocking, and some that it is my ghost; and my master and madame will take it to be nothing but my own self. And then, in the doubt among all these, my poor Erica will faint away; and while they are throwing water upon her face, and putting some camphorated

brandy into her mouth, I shall quietly step in among them, and grasp Peder's arm, and pull Oddo's hair, to show that it is I myself; and when Erica opens her eyes, she shall see my face at its very merriest; so that she cannot possibly take me for a sad and solemn ghost. And the next thing will be ——"

He stopped with a start, as his eyes fell upon his crushed boat, lying on its side, half in the water and half out.

"Ah!" thought he, in a changed mood—"this is all very fine—this planning how one pleasant thing will follow upon another; but I forgot the first thing of all. I must learn first how I am to get out."

He turned his boat about and about, and shook his head over every bruise, hole, or crack that he found, till he finished with a nod of decision that nothing could be done with it. He was a good swimmer; but the nearest point of the shore was so far off that it would be all he could do to reach it when the waters were in their most favorable state. At present, they were so chilled with the melted snows that were pouring down from every steep along the fiord, that he doubted the safety of attempting to swim at all. What chance of release had he then?

If he could by any means climb upon the rocks, in whose recesses he was now hidden, he might possibly fall in with some fishing-boat which would fetch him off; but, besides that the pirates were more likely to see him than anybody else, he believed there was no way by which he could climb upon the islet. It had always been considered the exclusive property of the aquatic birds with which it swarmed, because its sides rose so abruptly from the water, so like the smooth stone walls of a lofty building, that there was no hold for foot or hand, and the summit seemed unattainable by anything that had not wings. Rolf remembered, however, having heard Peder say that when he was young, there might be seen hanging down one part of the precipice the remains of a birchen ladder, which must have been made and placed there by human hands. Rolf determined that he would try the point. He would wait till the tide was flowing in, as the waters from the open sea were somewhat less chilled than when returning from the head of the fiord: he would take the waters at their warmest, and try and try again to make a footing upon the islet. Meantime, he would not trouble himself with thoughts of being a prisoner.

His cave was really a very pretty place. As its opening fronted the west, he found that even here there might be sunshine. The golden light which blesses the high and low places of the earth did not disdain to cheer and adorn even this humble chamber, which, at the bidding of nature, the waters had patiently scooped out of the hard rock. Some hours after darkness had settled down on the lands of the tropics, and long after the stars had come out in the skies over English heads, this cave was at its brightest. As the sun drew to its setting, near the middle of the Nordland summer night, it

levelled its golden rays through the cleft, and made the place far more brilliant than at noon. The projections of the rough rock caught the beam, during the few minutes that it stayed, and shone with a bright orange tint. The beach suddenly appeared of a more dazzling white, and the waters of a deeper green, while, by their motion, they cast quivering circles of reflected light upon the roof, which had before been invisible. Rolf took this brief opportunity to survey his abode carefully. He had supposed, from the pleasant freshness of the air, that the cave was lofty; and he now saw that the roof did indeed spring up to a vast height. He saw also that there was a great deal of drift-wood accumulated; and some of it thrown into such distant corners as to prove that the waves could dash up to a much higher water-line, in stormy weather, than he had supposed. No matter! He hoped to be gone before there were any more storms. Tired and sleepy as he was, so near midnight, he made an exertion, while there was plenty of light, to clear away the sea-weeds from a space on the sand where he must to-morrow make his fire, and broil his fish. The smell of the smallest quantity of burnt weed would be intolerable in so confined a place; so he cleared away every sprout of it, and laid some of the drift-wood on a spot above high-water mark; picking out the driest pieces of fire-wood he could find for kindling a flame.

When this was done, he could have found in his heart to pick up shells—so various and beautiful were those which strewed the floor of his cave; but the sunbeam was rapidly climbing the wall, and would presently be gone; so he let the shells lie till the next night, (if he should still be here,) and made haste to heap up a bed of fine dry sand in a corner; and here he lay down as the twilight darkened, and thought he had never rested on so soft a bed. He knew it was near high water; and he tried to keep awake, to ascertain how nearly the tide filled up the entrance; but he was too weary, and his couch was too comfortable for this. His eyes closed in spite of him; and he dreamed that he was broad awake watching the height of the tide. For this one night, he could rest without any very painful thoughts of poor Erica; for she was prepared for his remaining out till the middle of the next day at least.

When he awoke in the morning, the scene was marvellously changed from that on which he had closed his eyes. His cave was so dim that he could scarcely distinguish its white floor from its rocky sides. The water was low, and the cleft therefore enlarged; so that he saw at once that now was the time for making his fire—now when there was the freest access for the air. Yet he could not help pausing to admire what he saw. He could see now a long strip of the fiord—a perspective of waters and of shores, ending in a lofty peak still capped with snow, and glittering in the sunlight. The whole landscape was bathed in light, as warm as noon; for, though it was only six in the morning, the sun had been up for several hours. As Rolf gazed, and reckoned up the sum of what he saw

the many miles of water, and the long range of rocks, he felt, for a moment, as if not yet secure from Hund—as if he must be easily visible while he saw so much. But it was not so, and Rolf smiled at his own momentary fear when he remembered how, as a child, he had tried to count the stars he could see at once through a hole pricked by a needle in a piece of paper, and how, for that matter, all that we ever see is through the little circle of the pupil of the eye. He smiled when he considered that while, from his recess, he could see the united navy of Norway and Denmark, if anchored in the fiord, his enemy could not see even his habitation, otherwise than by peeping under the bushes which overhung the cleft; and this only at low water. So he began to sing while rubbing together, with all his might, the dry sticks of fir with which his fire was to be kindled. First they smoked; and then, by a skilful breath of air, they blazed, and set fire to the heap; and by the time the herrings were ready for broiling, the cave was so filled with smoke that Rolf's singing was turned to coughing.

Some of the smoke hung in soot on the roof and walls of the cave, curling up so well at first that Rolf almost thought there must be some opening in the lofty roof which served as a chimney. But there was not; and some of the smoke came down again, issuing at last from the mouth of the cave. Rolf observed this; and, seeing the danger of his place of retreat being thus discovered, he made haste to finish his cookery, resolving that, if he had to remain here for any length of time, he would always make his fire in the night. He presently threw water over his burning brands, and hoped that nothing had been seen of the process of preparing his breakfast.

The smoke had been seen, however, and by several people; but in such a way as to lead to no discovery of the cave. From the schooner, Hund kept his eyes fixed on the islet, at every moment he had to spare. Either he was the murderer of his fellow-servant, or the islet was bewitched; and if Rolf was under the protection and favor of the powers of the region, he, Hund, was out of favor, and might expect bad consequences. Whichever might be the case, Hund was very uneasy; and he could think of nothing but the islet, and look no other way. His companions had at first joked him about his luck in getting rid of his enemies; but, being themselves superstitious, they caught the infection of his gravity, and watched the spot almost as carefully as he.

As their vessel lay higher up in the fiord than the islet, they were on the opposite side from the crevice, and could not see from whence the smoke issued. But they saw it in the form of a light cloud hanging over the place. Hund's eyes were fixed upon it, when one of his comrades touched him on the shoulder. Hund started.

"You see there," said the man, pointing.

"To be sure I do. What else was I looking at?"

"Well, what is it?" inquired the man. "Has

your friend got a visitor—come a great way this morning! They say the mountain-sprite travels in mist. If so, it is now going. See, there it sails off—melts away. It is as like common smoke as anything that ever I saw. What say you to taking the boat, and trying again whether there is no place where your friend might not land, and be now making a fire among the birds' nests?"

"Nonsense!" cried Hund. "What became of the skiff, then?"

"True," said the man; and, shaking his head, he passed on, and spoke to the master.

In his own secret mind, the master of the schooner did not quite like his present situation. The little harbor was well sheltered and hidden from the observation of the inhabitants of the upper part of the fiord; but, after hearing the words dropped by his crew, the master did not relish being stationed between the bewitched islet and the head of the fiord, where all the residents were, of course, enemies. He thought that it would be wiser to have a foe only on the one hand, and the open sea on the other, even at the sacrifice of the best anchorage. As there was now a light wind, enough to take his vessel down, he gave orders accordingly.

Slowly, and at some distance, the schooner passed the islet, and all on board crowded together to see what they could see. None—not even the master with his glass—saw anything remarkable; but all heard something. There was a faint muffled sound of knocks;—blows such as were never heard in a mere haunt of sea-birds. It was evident that the birds were disturbed by it. They rose and fell, made short flights and came back again, fluttered and sometimes screamed so as to overpower all other sounds. But if they were quiet for a minute, the knock, knock, was heard again, with great regularity, and every knock went to Hund's heart.

The fact was that, after breakfast, Rolf soon became tired of having nothing to do. The water was so very cold, that he deferred till noon the attempt to swim round the islet. He once more examined his boat; and, though the injuries done seemed irreparable, he thought he had better try to mend his little craft than do nothing. After collecting from the wood in the cave all the nails that happened to be sticking in it, and all the pieces that were sound enough to patch a boat with, he made a stone serve him for a hammer, straightened his nails upon another stone, and tried to fasten on a piece of wood over a hole. It was discouraging work enough; but it helped to pass the hours till the restless waters should have reached their highest mark in the cave; when he would know that it was noon, and time for his little expedition.

He sighed as he threw down his awkward new tools and pulled off his jacket, for his heart now began to grow very heavy. It was about the time when Erica would be beginning to look for his return; and when or how he was ever to return he became less able to imagine, the more he thought

about it. As he fancied Erica gazing down the fiord from the gallery, or stealing out, hour after hour, to look forth from the beach, and only to be disappointed every time, till she would be obliged to give him quite up, and yield to despair, Rolf shed tears. It was the first time for some years—the first time since he had been a man; and when he saw his own tears fall upon the sand, he was ashamed. He blushed, as if he had not been all alone, dashed away the drops, and threw himself into the water.

It was too cold by far for safe swimming. All the snows of Sulitelma could hardly have made the waters more chilly to the swimmer than they felt at the first plunge. But Rolf would not retreat for this reason. He thought of the sunshine outside, and of the free open view he should enjoy, dived beneath the almost closed entrance, and came up on the other side. The first thing he saw was the schooner, now lying below his island; and the next thing was a small boat between him and it, evidently making towards him. When convinced that Hund was one of the three men in it, he saw that he must go back, or make haste to finish his expedition. He made haste, swam round so close as to touch the warm rock in many places, and could not discover, any more than before, any trace of a footing by which a man might climb to the summit. There was a crevice or two, however, from which vegetation hung, still left unsearched. He could not search them now; for he must make haste home.

The boat was indeed so near when he had reached the point he set out from, that he used every effort to conceal himself; and it seemed that he could only have escaped by the eyes of his enemies being fixed on the summit of the rock. When once more in the cave, he rather enjoyed hearing them come nearer and nearer, so that the bushes which hung down between him and them shook with the wind of their oars, and dipped into the waves. He laughed silently when he heard one of them swear that he would not leave the spot till he had seen something: upon which another rebuked his presumption. Presently, a voice which he knew to be Hund's, called upon his name, at first gently, and then more and more loudly, as if taking courage at not being answered.

"I will wait till he rounds the point," thought Rolf, "and then give him such an answer as may send a guilty man away quicker than he came."

He waited till they were on the opposite side, so that his voice might appear to come from the summit of the islet, and then began with the melancholy sound used to lure the plover on the moors. The men in the boat instantly observed that this was the same sound used when Erlingsen's boat was spirited away from them. It was rather singular that Rolf and Oddo should have used the same sound; but they probably chose it as the most mournful they knew. Rolf, however, did not stop there. He moaned louder and louder, till the sound resembled the bellowing of a tormented spirit enclosed in the rock: and the consequence

was, as he had said, that his enemies retreated faster than they came. Never had they rowed more vigorously than now, fetching a large circuit, to keep at a safe distance from the spot, as they passed westward.

For the next few days, Rolf kept a close watch upon the proceedings of the pirates, and saw enough of their thievery to be able to lay informations against them, if ever he should again make his way to a town or village, and see the face of a magistrate. He was glad of the interest and occupation thus afforded him—of even this slight hope of being useful; for he saw no more probability, than on the first day, of release from his prison. The worst of it was that the season for boating was nearly at an end. The inhabitants were day by day driving their cattle up the mountains, there to remain for the summer; and the heads of families remained in the farm-houses, almost alone, and little likely to put out so far into the fiord as to near him. So poor Rolf could only catch fish for his support, swim round and round his prison, and venture a little further on days when the water felt rather less cold than usual. To drive off thoughts of his poor distressed Erica, he sometimes hammered a little at his skiff; but it was too plain that no botching that he could perform in the cave would render the broken craft safe to float in.

One sunny day, when the tide was flowing in warmer than usual, Rolf amused himself with more evolutions in bathing than he had hitherto indulged in. He forgot his troubles and his foes in diving, floating, and swimming. As he dashed round a point of a rock, he saw something, and was certain he was seen. Hund appeared at least as much bewitched as the islet itself: for he could not keep away from it. He seemed irresistibly drawn to the scene of his guilt and terror. Here he was now, with one other man, in the schooner's smallest boat. Rolf had to determine in an instant what to do; for they were within a hundred yards, and Hund's starting eyes showed that he saw what he took for the ghost of his fellow-servant. Rolf raised himself as high as he could out of the water, throwing his arms up above his head, fixed his eyes on Hund, uttered a shrill cry, and dived, hoping to rise to the surface at some point out of sight. Hund looked no more. After one shriek of terror and remorse had burst from his white lips, he sank his head upon his knee, and let his comrade take all the trouble of rowing home again.

This vision decided Hund's proceedings. Half-crazed with remorse, he left the pirates that night. After long consideration where to go, he decided upon returning to Erlingsen's. He did not know to what extent they suspected him: he was pretty sure that they held no proofs against him. No where else could he be sure of honest work—the first object with him now, in the midst of his remorse. He felt irresistibly drawn towards poor Erica, now that no rival was there; and if, mixed with all these considerations, there were some thoughts of the situation of houseman being va-

cant, and needing much to be filled up, it is no wonder that such a mingling of motives took place in a mind so selfish as Hund's.

CHAPTER IX.—HUND'S REPORT.

HUND performed his journey by night—a journey perfectly unlike any that was ever performed by night in England. He did not for a moment think of going by the fiord, short and easy as it would have been in comparison with the land road. He would rather have mounted all the steepes and crossed the snows of Sulitelma itself, many times over, than have put himself in the way a second time of such a vision as he had seen. Laboriously and diligently, therefore, he overcame the difficulties of the path, crossing ravines, wading through swamps, scaling rocks, leaping across watercourses, and only now and then throwing himself down on some tempting slope of grass, to wipe his brows, and, where opportunity offered, to moisten his parched throat with the wild strawberries which were fast ripening in the sheltered nooks of the hills. It was now so near midsummer, and the nights were so fast melting into the days, that Hund could at the latest scarcely see a star, though there was not a fleece of cloud in the whole circle of the heavens. While yet the sun was sparkling on the fiord, and glittering on every farm-house window that fronted the west, all around was as still as if the deepest darkness had settled down. The eagles were at rest on their rocky ledge, a thousand feet above the waters. The herons had left their stand on their several promontories of the fiord, and the flapping of their wings overhead was no more heard. The raven was gone home; the cattle were all far away on the mountain pasture; the goats were hidden in the woods which yielded the tender shoots on which they subsisted. The round eyes of a white owl stared out upon him here and there, from under the eaves of a farm-house; and these seemed to be the only eyes besides his own that were open. Hund knew as he passed one dwelling after another—knew as well as if he had looked in at the windows—that the inhabitants were all asleep, even with the sunshine lying across their very faces.

Every few minutes he observed how his shadow lengthened, and he longed for the brief twilight which would now soon be coming on. Now, his shadow stretched quite across a narrow valley, as he took breath on a ridge crossed by the soft breeze. Then the shadow stood up against a precipice, taller than the tallest pine upon the steep. Then the yellow gleam grew fainter, the sparkles on the water went out, and he saw the large pale circle of the sun sink and sink into the waves, where the fiord spread out wide to the south-west. Even the weary spirit of this unhappy man seemed now to be pervaded with some of the repose which appeared to be shed down for the benefit of all that lived. He walked on and on; but he felt the grass softer under his feet—the air cooler upon his brow; and he began to comfort himself with thinking that he had not murdered Rolf. He said

to himself that he had not laid a finger on him, and that the skiff might have sunk exactly as it did, if he had been sitting at home, carving a bell-collar. There could be no doubt that the skiff had been pulled down fathoms deep by a strong hand from below; and if the spirits were angry with Rolf, that was no concern of Rolf's human enemies. Thus Hund strove to comfort himself; but it would not do. The more he tried to put away the thought, the more obstinately it returned, that he had been speeding on his way to injure Rolf when the strange disappearance took place; and that he had long hated and envied his fellow-servant, however marvellously he had been prevented from capturing or slaying him. These thoughts had no comfort in them; but better came after a time.

He had to pass very near M. Kollsen's abode; and it crossed his mind that it would be a great relief to open his heart to a clergyman. He halted for a minute in sight of the house, but presently went on, saying to himself that he could not say all to M. Kollsen, and would therefore say nothing. He should get a lecture against superstition, and hear hard words of the powers he dreaded; and there would be no consolation in this. It was said that the Bishop of Tronjem was coming round this way soon, in his regular progress through his diocese, and everybody bore testimony to his gentleness and mercy. It would be best to wait for his coming. Then Hund began to calculate how soon he would come; for aching hearts are impatient of relief; and the thought how near midsummer was, made him look up into the sky—that beautiful index of the seasons in a northern climate. There were a few extremely faint stars—a very few—for only the brightest could now show themselves in the sky where daylight lingered so as never quite to depart. A pale-green hue remained where the sun had disappeared, and a deep red glow was even now beginning to kindle where he was soon to rise. Just here, Hund's ear caught some tones of the soft harp music which the winds make in their passage through a wood of pines; and there was a fragrance in the air from a new thatch of birch-bark just laid upon a neighboring roof. This fragrance, that faint vibrating music, and the soft veiled light, were soothing; and when, besides, Hund pictured to himself his mind relieved by a confession to the good bishop—perhaps cheered by words of pardon and of promise, the tears burst from his eyes, and the fever of his spirit was allayed.

Then up came the sun again, and the new thatch reeked in his beams, and the birds shook off sleep and plumed themselves, and the peak of Sulitelma blushed with the softest rose-color, and the silvery fish leaped out of the water, and the blossoms in the gardens opened, though it was only an hour after midnight. Every creature except man seemed eager to make the most of the short summer season—to waste none of its bright hours, which would be gone too soon;—every creature except man; but man must have rest, be the sun high or sunk beneath the horizon; so that

Hund saw no face, and heard no human voice, before he found himself standing at the top of the steep rocky pathway which led down to Erlingsen's abode.

Hund might have known that he should find everything in a different state from that in which he had left the place; but yet he was rather surprised at the aspect of the farm. The stable-doors stood wide; and there was no trace of milk-pails. The hurdles of the fold were piled upon one another in a corner of the yard. It was plain that herd, flock, and dairy-women were gone to the mountain; and, though Hund dreaded meeting Erica, it struck upon his heart to think that she was not here. He felt now how much it was for her sake that he had come back.

He half resolved to go away again; but from the gallery of the house some snow-white sheets were hanging to dry; and this showed that some neat and busy female hands were still here. Next, his eye fell upon the boat which lay gently rocking with the receding tide in its tiny cove; and he resolved to lie down in it and rest, while considering what to do next. He went down, stepping gently over the pebbles of the beach, lest his tread should reach and waken any ear through the open windows, lay down at the bottom of the boat, and, as might have been expected, fell asleep as readily as an infant in a cradle.

Of course he was discovered; and, of course, Oddo was the discoverer. Oddo was the first to come forth, to water the one horse that remained at the farm, and to give a turn and a shake to the two or three little cocks of hay which had been mown behind the house. His quick eye noted the deep marks of a man's feet in the sand and pebbles, below high-water mark, proving that some one had been on the premises during the night. He followed these marks to the boat, where he was amazed to find the enemy (as he called Hund) fast asleep. Oddo was in a great hurry to tell his grandfather (Erlingsen being on the mountain;) but he thought it only proper caution to secure his prize from escaping in his absence.

He summoned his companion, the dog which had warned him of many dangers abroad, and helped him faithfully with his work at home; and nothing could be clearer to Skorro than that he was to crouch on the thwarts of the boat, with his nose close to Hund's face, and not to let Hund stir till Oddo came back. Then Oddo ran, and wakened his grandfather, who made all haste to rise and dress. Erica now lived in Peder's house. She had taken her lover's place there, since his disappearance; as the old man must be taken care of, and the house kept; and her mistress thought the interest and occupation good for her. Hearing Oddo's story, she rushed out, and her voice was soon heard in passionate entreaty, above the bark of the dog, which was trying to prevent the prisoner from rising.

"Only tell me," Erica was heard to say, "only tell me where and how he died. I know

he is dead—I knew he would die, from that terrible night when we were betrothed. Tell me who did it—for I am sure you know. Was it Nipen?—Yes, it was Nipen, whether it was done by wind or water, or human hands. But speak, and tell me where he is. O, Hund, speak! Say only where his body is, and I will try—I will try never to speak to you again—never to—"

Hund looked miserable; he moved his lips; but no sound was heard mingling with Erica's rapid speech.

Madame Erlingsen, who, with Orga, had by this time reached the spot, laid her hand on Erica's arm, to beg for a moment's silence, made Oddo call his dog out of the boat, and then spoke, in a severe tone, to Hund.

"Why do you shake your head, Hund, and speak no word! Say what you know, for the sake of those whom, we grievously suspect, you have deeply injured. Say what you know, Hund."

"What I say is, that I do not know," replied Hund, in a hoarse and agitated voice. "I only know that we live in an enchanted place, here by this fiord, and that the spirits try to make us answer for their doings. The very first night after I went forth, this very boat was spirited away from me, so that I could not come home. Nipen had a spite against me there—to make you all suspect me. I declare to you that the boat was gone, in a twinkling, by magic, and I heard the cry of the spirit that took it."

"What was the cry like?" asked Oddo, gravely.

"Where were you, that you were not spirited away with the boat?" asked his mistress.

"I was tumbled out upon the shore, I don't know how," declared Hund;—"found myself sprawling on a rock, while the creature's cries brought my heart into my mouth as I lay."

"Alone!—Were you alone?" asked his mistress.

"I had landed the pastor some hours before, madame; and I took nobody else with me, as Stiorna can tell; for she saw me go."

"Stiorna is at the mountain," observed madame, coolly.

"But, Hund," said Oddo, "how did Nipen take hold of you when it laid you sprawling on the rock? Neck and heels? Or did it bid you go and hearken whether the pirates were coming, and whip away the boat before you came back? Are you quite sure that you sprawled on the rock at all before you ran away from the horrible cry you speak of? Our rocks are very slippery when Nipen is at one's heels."

Hund stared at Oddo, and his voice was yet hoarser when he said that he had long thought that boy was a favorite with Nipen; and he was sure of it now.

Erica had thrown herself down on the sand, hiding her face on her hands, on the edge of the boat, as if in despair of her misery being attended

to—her questions answered. Old Peder stood beside her, stroking her hair tenderly; and he now spoke the things she could not.

"Attend to me, Hund," said Peder, in the grave, quiet tone which every one regarded. "Hear my words, and, for your own sake, answer them. We suspect you of being in communication with the pirates yonder; we suspect that you went to meet them when you refused to go hunting the bears. We know that you have long felt ill-will towards Rolf—envy of him—jealousy of him;—and—"

Here Erica looked up, pale as ashes, and said,

"Do not question him further. There is no truth in his answers. He spoke falsehood even now."

Peder saw how Hund shrank under this, and thought the present the moment to get truth out of him, if he ever could speak it. He therefore went on to say—

"We suspect you of having done something to keep your rival out of the way, in order that you might obtain the house and situation—and perhaps something else that you wish."

"Have you killed him?" asked Erica, abruptly, looking full in his face.

"No," returned Hund, firmly. From his manner everybody believed this much.

"Do you know that anybody else has killed him?"

"No."

"Do you know whether he is alive or dead?"

To this Hund could, in the confusion of his ideas about Rolf's fate and condition, fairly say "No;" as also to the question, "Do you know where he is?"

Then they all cried out,

"Tell us what you do know about him."

"Ay, there you come," said Hund, resuming some courage, and putting on the appearance of more than he had. "You load me with foul accusations; and when you find yourselves all in the wrong, you alter your tone, and put yourselves under obligation to me for what I will tell. I will treat you better than you treat me; and I will tell you plainly why. I repent of my feelings towards my fellow-servant, now that evil has befallen him—"

"What? O what?" cried Erica.

"He was seen fishing on the fiord, in that poor little worn-out skiff. I myself saw him. And when I looked next for the skiff, it was gone—it had disappeared."

"And where were you?"

"Never mind where I was. I was not with him, but about my own business. And I tell you, I no more laid a finger on him or his skiff than any one of you."

"Where was it?"

"Close by Vogel islet!"

Erica started, and, in one moment's flush of hope, told that Rolf had said he should be safe at any time near Vogel islet. Hund caught at her

words so eagerly as to make a favorable impression on all, who saw, what was indeed the truth, that he would have been glad to know that Rolf was alive. Their manner so changed towards Hund, that if Stiora had been there, she would have triumphed. But the more they considered the case, the more improbable it seemed that Rolf should have escaped drowning.

"Mother, what do you think?" whispered the gentle Orga.

"I think, my dear, that we shall never forgive ourselves for letting Rolf go out in that old skiff."

"Then you think—you feel quite sure—mother, that Nipen had nothing to do with it."

"I feel confident, my dear, that there is no such being as Nipen."

"Even after all that has happened!—after this, following upon Oddo's prank that night!"

"Even so, Orga. We suffer by our own carelessness and folly, my love; and it makes us neither wiser nor better to charge the consequences upon evil spirits;—to charge our good God with permitting revengeful beings to torment us, instead of learning from his chastisements to sin in the same way no more."

"But, mother, if you are right, how very far wrong all these others are!"

"It is but little, my child, that the wisest of us know; but there is a whole eternity before us, every one, to grow wise in. Some," and she looked towards Oddo, "may outgrow their mistakes here; and others," looking at old Peder, "are travelling fast towards a place where everybody is wiser than years or education can make us here. Your father and I do wish, for Frolich and you, that you should rest your reverence, your hopes and fears, on none but the good God. Do we not know that not even a sparrow falleth to the ground without his will?"

"Poor Erica would be less miserable if she could think so," sighed Orga. "She will die soon, if she goes on to suffer as she does. I wish the good bishop would come; for I do not think M. Kolsen gives her any comfort. Look now! what can she have to say to Hund?"

What Erica had to say to Hund was,

"I believe some of the things you have told. I believe that you did not lay hands on Rolf."

"Bless you! Bless you for that!" interrupted Hund, almost forgetting how far he really was guilty in the satisfaction of hearing these words from the lips that spoke them.

"Tell me, then," proceeded Erica, "how you believe he really perished.—Do you fully believe he perished?"

"I believe," whispered Hund, "that the strong hand pulled him down—down to the bottom."

"I knew it," said Erica, turning away.

"Erica—one word," exclaimed Hund. "I must stay here—I am very miserable, and I must stay here, and work, and work till I get

some comfort. But you must tell me how you think of me—you must say that you do not hate me.”

“I do hate you,” said Erica, with disgust, as her suspicions of his wanting to fill Rolf’s place were renewed. “I mistrust you, Hund, more deeply than I can tell.”

“Will no penitence change your feelings, Erica? I tell you I am as miserable as you.”

“That is false, like everything else that you say,” cried Erica. “I wish you would go—go and seek Rolf under the waters—”

Hund shuddered at the thought, as it recalled what he had seen and heard at the islet. Erica saw this, and sternly repeated,

“Go and bring back Rolf from the deeps; and then I will cease to hate you. Ah! I see the despair in your face. Such despair never came from any woman’s words where there was not a bad conscience to back them.”

Hund felt that this was true, and made no reply.

As Erica slowly returned into Peder’s house, Oddo ran past, and was there before her. He closed the door when she had entered, put his hand within hers, and said,

“Did Rolf really tell you that he should be safe anywhere near Vogel islet?”

“Yes,” sighed Erica—“safe from the pirates. That was his answer when I begged him not to go so far down the fiord: but Rolf always had an answer when one asked him not to go into danger. You see how it ended;—and he never would believe in *that* danger.”

“I shall never be happy again, if this is Nipen’s doing,” said Oddo. “But, Erica, you went one trip with me, and I know you are brave. Will you go another? Will you go to the islet, and see what Rolf could have meant about being safe there?”

Erica brightened for a moment; and perhaps would have agreed to go: but Peder came in; and Peder said he knew the islet well, and that it was universally considered that it was now inaccessible to human foot, and that that was the reason why the fowl flourished there as they did in no other place. Erica must not be permitted to go so far down among the haunts of the pirates. Instead of this, her mistress had just decided that, as there was no present means of getting rid of Hund—as indeed his depressed state of spirits seemed to give him some title to be received again—and as Erica could not be expected to remain just now in his presence, she should set off immediately for the mountain, and request Erlingsen to come home. This was only hastening her departure by two or three days. At the seater she would find less to try her spirits than here; and, when Erlingsen came, he would, if he thought proper, have Hund carried before a magistrate; and would, at least, set such inquiries afloat through the whole region as would bring to light anything that might chance to be known of Rolf’s fate.

Erica could not deny that this was the best plan that could be pursued, though she had no heart

for going to the seater, any more than for doing anything else. Under Peder’s urgency, however, she made up her bundle of clothes, took in her hand her lure,* with which to call home the cattle in the evenings, bade her mistress farewell privately, and stole away without Hund’s knowledge, while Oddo was giving him meat and drink within the house. Old Peder listened to her parting footsteps; and her mistress watched her up the first hill, thinking to herself how unlike this was to the usual cheerful departure to the mountain dairies. Never, indeed, had a heavier heart burdened the footsteps of the wayfarer about to climb the slopes of Sulitelma.

CHAPTER X.—SEEKING THE UPLANDS.

Now that the great occasion was come—that brightest day of the year—the day of going to the seater, how unlike was it to all that the lovers had imagined and planned! How unlike was the situation of the two! There was Rolf cooped up in a dim cave, his heart growing heavy as his ear grew weary of the incessant dash and echo of the waters! And here was Erica on the free mountain side, where all was silent except the occasional rattle of a brook over the stones, and the hum of a cloud of summer flies. The lovers were alike in their unhappiness only; and hardly in this, so much the most wretched of the two was Erica.

The sun was hot; and her path occasionally lay under rocks which reflected the heat upon the passenger. She did not heed this, for the aching of her heart. Then she had to pass through a swamp, whence issued a host of mosquitoes, to annoy any who intruded upon their domain. It just occurred to Erica that Rolf made her pass this place on horseback last year, well veiled, and completely defended from these stinging tormentors; but she did not heed them now. When, somewhat higher up, she saw in the lofty distance a sunny slope of long grass undulating in the wind, like the surface of a lake, tears sprang into her eyes; for Rolf had said that when they came in sight of the waving pasture, she would alight, and walk the rest of the way with him. Instead of this, and instead of the gay procession from the farm, musical with the singing of boys and girls, the lowing of the cows, and the bleating of the kids, all rejoicing together at going to the mountain, here she was alone, carrying a widowed heart, and wandering with unwilling steps further and further from the spot where she had last seen Rolf.

She dashed the tears from her eyes, and looked behind her, at the entrance of a ravine which

* The lure is a wooden trumpet, nearly five feet long, made of two hollow pieces of birch-wood, bound together throughout the whole length with slips of willow. It is used to call the cattle together on a wide pasture; and is also carried by travelling parties, to save the risk of any one being lost in the wilds. Its notes, which may be heard to a great distance, are extremely harsh and discordant; having none of the musical tone of the Alphorn—the cow-horn used by the Swiss for the same purposes—which sounds well at a distance.

would hide from her the fiord and the dwelling she had left. Thor islet lay like a fragment of the leafy forest cast into the blue waters; but Vogel islet could not be seen. It was not too far down to be seen from an elevation like this; but it was hidden behind the promontories by which the fiord was contracted. Erica could see what she next looked for—knowing, as she did, precisely where to look. She could see the two graves belonging to the household—the two hillocks which were railed in behind the house; but she turned away sickening at the thought that Rolf could not even have a grave; that that poor consolation was denied her. She looked behind her no more; but made her way rapidly through the ravine; the more rapidly because she had seen a man ascending by the same path at no great distance, and she had little inclination to be joined by a party of wandering Laplanders, seeking a fresh pasture for their reindeer; still less by any neighbor from the fiord, who might think civility required that he should escort her to the seat. This wayfarer was walking at a pace so much faster than hers, that he would soon pass; and she would hide among the rocks beside the tarn* at the head of the ravine till he had gone by.

It was refreshing to come out of the hot steep ravine upon the grass at the upper end of it. Such grass! A line of pathway was trodden in it straight upwards, by those who had before ascended the mountain; but Erica left this path, and turned to the right, to seek the tarn which there lay hidden among the rocks. The herbage was knee-deep, and gay with flowers—with wild geranium, pansies, and especially with the yellow blossoms which give its peculiar hue and flavor to the Gammel cheese, and to the butter made in the mountain dairies of Norway. Through this rich pasture Erica waded till she reached the tarn which fed the stream that gambolled down the ravine. The death-cold unfathomed waters lay calm and still under the shelter of the rocks which nearly surrounded them. Even where crags did not rise abruptly from the water, huge blocks were scattered; masses which seemed to have lain so long as to have seen the springing herbage of a thousand summers.

In the shadow of one of these blocks, Erica sank down into the grass. There she, and her bundle, and her long lure were half buried; and this, at last, felt something like rest. Here she would remain long enough to let the other wayfarer have a good start up the mountain; and by that time she should be cool and tranquillized:—yes, tranquillized; for here she could seek that peace which never failed when she sought it as Christians may. She hid her face in the fragrant grass, and did not look up again till the grief of her soul was stilled. Then her eye and her heart were open to the beauty of the place which she had made her temple of worship; and she gazed around till she saw something that surprised her.

A reindeer stood on the ridge, his whole form, from his branching head to his slender legs, being clearly marked against the bright sky. He was not alone. He was the sentinel, set to watch on behalf of several companions—two or three being perched on ledges of the rock, browsing—one standing half buried in the herbage of the pasture, and one on the margin of the water, drinking as it would not have dreamed of doing if the wind had not been in the wrong quarter for letting him know how near the hidden Erica was.

This pretty sight was soon over. In a few moments, the whole company appeared to take flight all at once, without her having stirred a muscle. Away they went, with such speed and noiselessness that they appeared not to touch the ground. From point to point of the rock they sprang, and the last branchy head disappeared over the ridge, almost before Erica could stand upright, to see all she could of them.

She soon discovered the cause of their alarm. She thought it could not have been herself; and it was not. The traveller who, she had hoped, was now some way up the mountain, was standing on the margin of the tarn, immediately opposite to her, so that the wind had carried the scent to the herd. The traveller saw her at the same moment that she perceived him; but Erica did not discover this, and sank down again into the grass, hoping so to remain undisturbed. She could not thus observe what his proceedings were; but her ear soon informed her that he was close by. His feet were rustling in the grass.

She sat up, and took her bundle and her lure, believing now that she must accept the unwelcome civility of an escort for the whole of the rest of the way, and thinking that she might as well make haste, and get it over. The map, however, seemed in no hurry. Before she could rise, he took his seat on the huge stone beside her, crossed his arms, made no greeting, but looked her full in the face.

She did not know the face; nor was it like any that she had ever seen. There was such long hair, and so much beard, that the eyes seemed the only feature which made any distinct impression. Erica's heart now began to beat violently. Though wishing to be alone, she had not dreamed of being afraid till now; but now it occurred to her that she was seeing the rarest of sights—one not seen twice in a century; no other than the mountain-demon. Sulitelma, as the highest mountain in Norway, was thought to be his favorite haunt; and considering his strange appearance, and his silence, it could hardly be other than himself.

The test would be whether he would speak first; a test which she resolved to try, though it was rather difficult to meet and return the stare of such a neighbor without speaking. She could not keep this up for more than a minute; so she sprang to her feet, rested her lure upon her shoulder, took her bundle in her hand, and began to wade back through the high grass to the pathway, almost expecting, when she thought of her moth-

* Small lake upon a mountain.

er's fate, to be seized by a strong hand, and cast into the unfathomable tarn, whose waters were said to well up from the centre of the earth. Her companion, however, merely walked by her side. As he did not offer to carry her bundle, he could be no countryman of hers. There was not a peasant in Nordland who would not have had more courtesy.

They walked quietly on till the tarn was left some way behind. Erica found she was not to die that way. Presently after she came in sight of a settlement of Lapps—a cluster of low and dirty tents, round which some tame reindeer were feeding. Erica was not sorry to see these; though no one knew better than she the helpless cowardice of these people; and it was not easy to say what assistance they could afford against the mountain-demon. Yet they were human beings, and would appear in answer to a cry. She involuntarily shifted her lure, to be ready to utter a call. The stranger stopped to look at the distant tents, and Erica went on, at the same pace. He presently overtook her, and pointed towards the Lapps with an inquiring look. Erica only nodded.

"Why you no speak?" growled the stranger, in broken language.

"Because I have nothing to say," declared Erica, in the sudden vivacity inspired by the discovery that this was probably no demon. Her doubts were renewed, however, by the next question.

"Is the bishop coming?"

Now, none were supposed to have a deeper interest in the holy bishop's travels than the evil spirits of any region through which he was to pass.

"Yes, he is coming," replied Erica. "Are you afraid of him?"

The stranger burst into a loud laugh at her question; and very like a mocking fiend he looked, as his thick beard parted to show his wide mouth, with its two ranges of teeth. When he finished laughing, he said, "No, no—we no fear bishop."

"We!" repeated Erica, to herself. "He speaks for his tribe as well as himself."

"We no fear bishop," said the stranger, still laughing. "You no fear——?" and he pointed to the long stretch of path—the prodigious ascent before them.

Erica said there was nothing to fear on the mountain for those who did their duty to the powers, as it was her intention to do. Her first Gammel cheese was to be for him whose due it was; and it should be the best she could make.

This speech she thought would suit, whatever might be the nature of her companion. If it was the demon, she could do no more to please him than promise him his cheese.

Her companion seemed not to understand or attend to what she said. He again asked if she was not afraid to travel alone in so dreary a place, adding, that if his countrywomen were to be overtaken by a stranger like him, on the wilds of a

mountain, they would scream and fly;—all which he acted very vividly, by way of making out his imperfect speech, and trying her courage at the same time.

When Erica saw that she had no demon for a companion, but only a foreigner, she was so much relieved as not to be afraid at all. She said that nobody thought of being frightened in summer time in her country. Winter was the time for that. When the days were long, so that travellers knew their way, and when everybody was abroad, so that you could not go far without meeting a friend, there was nothing to fear.

"You go abroad to meet friends, and leave your enemy behind."

At the moment, he turned to look back. Erica could not now help watching him, and she cast a glance homewards too. They were so high up the mountain that the fiord and its shores were in full view; and more;—for the river was seen in its windings from the very skirts of the mountain to the fiord, and the town of Saltdalen standing on its banks. In short, the whole landscape to the west lay before them, from Sulitelma to the point of the horizon where the islands and rocks melted into the sea.

The stranger had picked up an eagle's feather in his walk; and he now pointed with it to the tiny cove in which Erlingsen's farm might be seen, looking no bigger than an infant's toy, and said,

"Do you leave an enemy there, or is Hund now your friend?"

"Hund is nobody's friend, unless he happens to be yours," Erica replied, perceiving at once that her companion belonged to the pirates. "Hund is everybody's enemy; and, above all, he is an enemy to himself. He is a wretched man."

"The bishop will cure that," said the stranger. "He is coward enough to call in the bishop to cure all. When comes the bishop?"

"Next week."

"What day, and what hour?"

Erica did not choose to gratify so close a curiosity as this. She did not reply; and while silent, was not sorry to hear the distant sound of cattle-bells;—and Erlingsen's cattle-bells, too. The stranger did not seem to notice the sound, even though quickening his pace, to suit Erica's, who pressed on faster when she believed protection was at hand. And yet the next thing the stranger said brought her to a full stop. He said he thought a part of Hund's business with the bishop would be to get him to disenchant the fiord, so that boats might not be spirited away almost before men's eyes; and that a rower and his skiff might not sink like lead one day, and the man may be heard the second day, and seen the third, so that there was no satisfactory knowledge as to whether he was really dead. Erica stopped, and her eager looks made the inquiry which her lips could not speak. Her eagerness put her companion on his guard, and he would explain no further than by

saying that the fiord was certainly enchanted, and that strange tales were circulating all round its shores—very striking to a stranger;—a stranger had nothing more to do with the wonders of a country than to listen to them. He wanted to turn the conversation back to Hund. Having found out that he was at Erlingsen's, he next tried to discover what he had said and done since his arrival. Erica told the little there was to tell—that he seemed full of sorrow and remorse. She told this in hope of a further explanation about drowned men being seen alive; but the stranger stopped when the bells were heard again, and a woman's voice singing, nearer still. He complimented Erica on her courage, and turned to go back the way he came.

"Stay," said Erica. "Do come to the dairy, now you are so near."

The man walked away rapidly.

"My master is here close at hand—he will be glad to see a stranger," she said, following him, with the feeling that her only chance of hearing something of Rolf was departing. The stranger did not turn, but only walked on faster, and with longer strides, down the slope.

The only thing now to be done was to run forwards and send a messenger after him. Erica forgot heat, weariness, and the safety of her property, and ran on towards the singing voice. In five minutes she found the singer, Frolich, lying along the ground and picking cloud-berries, with which she was filling her basket for supper.

"Where is Erlingsen?—quick—quick!" cried Erica.

"My father! You may just see him with your good eyes—up there."

And Frolich pointed to a patch of verdure on a slope high up the mountain, where the gazer might just discern that there were hay-cocks standing, and two or three moving figures beside them.

"Stiorna is there to-day, besides Jan. They hope to finish this evening," said Frolich; "and so here I am, all alone; and I am glad you have come, to help me to have a good supper ready for them. Their hunger will beat all my berry-gathering."

"You are alone!" said Erica, discovering that it was well that the pirate had turned back when he did. "You alone, and gathering berries, instead of having an eye on the cattle! Who has an eye on the cattle?"*

"Why, no one," answered Frolich. "Come

* It is a popular belief in Norway that there is a race of fairies or magicians, living underground, who are very covetous of cattle; and that to gratify their taste for large herds and flocks, they help themselves with such as graze on the mountains; making dwarfs of them to enable them to enter crevices of the ground, in order to descend to the subterranean pastures. This practice may be defeated, as the Norwegian herdsman believes, by his keeping his eye constantly on the cattle.

A certain bishop of Tronyem lost his cattle by the herds-men having looked away from them, beguiled by a spirit in the shape of a noble elk. The herds-men, looking towards their charge again, saw them reduced to the size

now, do not tease me with bidding me remember the bishop of Tronyem's cattle. The underground people have something to do elsewhere to-day; they give no heed to us."

"We must give heed to them, however," said Erica. "Show me where the cattle are, and I will collect them, and have an eye on them till supper is ready."

"You shall do no such thing, Erica. You shall lie down here and pick berries with me, and tell me the news. That will rest you and me at the same time; for I am as tired of being alone, as you can be of climbing the mountain. But why are your hands empty! Who is to lend you clothes! And what will the cows say to your leaving your lure behind, when they know you like it so much better than Stiorna's!"

Erica explained that her bundle and lure were lying on the grass, a little way below; and Frolich sprang to her feet, saying that she would fetch them presently. Erica stopped her, and told her she must not go; nobody should go but herself. She could not answer to Erlingsen for letting one of his children follow the steps of a pirate, who might return at any moment.

Frolich had no longer any wish to go. She started off towards the sleeping-shed, and never stopped till she had entered it, and driven a provision-chest against the door, leaving Erica far behind.

Erica, indeed, was in no hurry to follow. She returned for her bundle and lure; and then, uneasy about the cattle being left without an eye upon them, and thus confided to the negligence of the underground people, she proceeded to an eminence where two or three of her cows were grazing, and there sounded her lure. She put her whole strength to it, in hope that others, besides the cattle, might appear in answer; for she was really anxious to see her master.

The peculiar and far from musical sounds did spread wide over the pastures, and up the slopes, and through the distant woods, so that the cattle of another seater stood to listen, and her own cows began to move—leaving the sweetest tufts of grass, and rising up from their couches in the richest herbage, to converge towards the point whence she called. The far-off herdsman observed to his fellow that there was a new call among the pastures; and Erlingsen, on the upland, desired Jan and Stiorna to finish cocking the hay, and began his descent to his seater, to learn whether Erica had brought any news from home.

Long before he could appear, Frolich stole out trembling, and looking round her at every step. When she saw Erica, she flew over the grass, and threw herself down in it at Erica's feet.

"Where is he?" she whispered. "Has he come back?"

"I have not seen him. I dare say he is far off

of mice, just vanishing through a crevice in the hill-side. Hence the Norwegian proverb used to warn any one to look after his property, "Remember the Bishop of Tronyem's cattle!"

by this time at the Black Tarn, where I met with him."

"The Black Tarn! And do you mean that—no, you cannot mean that you came all the way together from the Black Tarn hither? Did you run? Did you fly? Did you shriek? O, what did you do?—with a pirate at your heels!"

"By my side," said Erica. "We walked and talked."

"With a pirate! But how did you know it was a pirate? Did he tell you so?"

"No; and at first I thought," and she sank her voice into a reverential whisper—"I thought for some time it was the demon of this place. When I found it was only a pirate, I did not mind."

"Only a pirate! Did not mind!" exclaimed Frolich. "You are the strangest girl! You are the most perverse creature! You think nothing of a pirate walking at your elbow for miles, and you would make a slave of yourself and me about these underground people, that my father laughs at, and that nobody ever saw. Ah! you say nothing aloud; but I know you are saying in your own mind, 'Remember the Bishop of Tronyem's cattle.'"

"You want news," said Erica, avoiding, as usual, all conversation about her superstitions. "How will it please you that the bishop is coming?"

"Very much, if we had any chance of seeing him. Very much, whether we see him or not, if he can give any help—any advice. * * * My poor Erica, I do not like to ask; but you have had no good news, I fear."

Erica shook her head.

"I saw that in your face, in a moment. Do not speak about it till you tell my father. He may help you—I cannot; so do not tell me anything."

Erica was glad to take her at her word. She kissed Frolich's hand, which lay on her knee, in token of thanks, and then inquired whether any gammel cheese was made yet.

"No," said Frolich, inwardly sighing for news. "We have the whey; but not sweet cream enough till after this evening's milking. So you are just in time."

Erica was glad, as she could not otherwise have been sure of the demon having his due.

"There is your father," said Erica. "Now do go and gather more berries, Frolich. There are not half enough; and you cannot be afraid of the pirate, with your father within call. Now, do go."

"You want me not to hear what you have to tell my father," said Frolich, unwilling to depart.

"That is very true. I shall tell him nothing till you are out of hearing. He can repeat to you what he pleases afterwards; and he will indulge you all the more for your giving him a good supper."

"So he will; and I will fill his cup myself," observed Frolich. "He says the corn-brandy is uncommonly good; and I will fill his cup till it will not hold another drop."

"You will not reach his heart that way, Frolich.

He knows to a drop what his quantity is; and there he stops."

"I know where there are some manyberries* ripe," said Frolich; "and he likes them above all berries. They lie this way, at the edge of the swamp, where the pirate will never think of coming."

And off she went, as Erica rose from the grass to curtsy to Erlingsen on his approach.

CHAPTER XI.—DAIRY-MAIDS' TALK.

It may be supposed that Erlingsen was anxious to be at home, when he had heard Erica's story. He was not to be detained by any promise of berries and cream for supper. He put away the thought even of his hay, yet unfinished on the upland, and would hear nothing that Frolich had to say of his fatigue at the end of a long working day. He took some provision with him, drank off a glass of corn-brandy, kissed Frolich, promised to send news, and, if possible, more helping hands, and set off, at a good pace, down the mountain.

The party he left behind was but a dull one. When Jan came in to supper, he became angry that he was left to get in the hay alone. Even Stiorna could not help him to-morrow; for the cheese-making had already been put off too long while waiting for Erica's arrival; and it must now be delayed no longer. It was true, some one was to be sent from below; but such an one could not arrive before the next evening; and Jan would meanwhile have a long day alone, instead of having, as hitherto, his master for a comrade. Stiorna, for her part, was offended at the wish, openly expressed by all, that Hund might not be the person sent. She was sure he was the only proper person, but she saw that he would meet with no welcome, except from her.

Scarcely a word was spoken (though the mountain-dairies have the reputation of being the merriest places in the world) till Erica and Frolich were about their cheese-making the next morning. Erica had rather have kept the cattle; but Frolich so earnestly begged that she would let Stiorna do that, as she could not destroy the cattle in her ill-humor, while she might easily spoil the cheese, that Erica put away her knitting, tied on her apron, tucked up her sleeves, and prepared for the great work.

"There! Let her go!" cried Frolich, looking after Stiorna, as she walked away slowly, trailing her lure after her. "She may knit all her ill-humor into her stocking, if she likes, as Hund is to wear it; and that is better than putting it into our cheese. Erica," said the kind-hearted girl, "you are worth a hundred of her. What has she to disturb her in comparison with you?—and yet you do just what I ask you, and work at our business, as if nothing was the matter. If you chose to cry all day on the two graves down there at home, nobody could think it unreasonable."

Erica was washing the bowls and cheese-moulds

* The Moltebæxer, or Manyberries, so called from its clustered appearance. It is a delicious fruit, amber-colored when ripe, and growing in marshy ground.

in juniper water at this moment; and her tears streamed down upon them at Frolich's kind words.

"We had better not talk about such things, dear," said she, as soon as she could speak.

"Nay, now, I think it is the best thing we can do, Erica. Here, pour me this cream into the pan over the fire, and I will stir, while you strain some more whey. My back is towards you, and I cannot see you; and you can cry as you like, while I tell you all I think."

Erica found that this free leave to cry unseen was a great help towards stopping her tears; and she ceased weeping entirely while listening to all that Frolich had to say in favor of Rolf being still alive and safe. It was no great deal that could be said; only that Hund's news was more likely to be false than true, and that there was no other evidence of any accident having happened.

"My dear!" exclaimed Erica, "where is he now, then—why is he not here? O, Frolich! I can hardly wonder that we are punished when I think of our presumption. When we were talking beside those graves on the day of Ulla's funeral, he laughed at me for even speaking of death and separation. 'What! at our age!' he said. 'Death at our age—and separation!'—and that with Henrica's grave before our eyes!"

"Then perhaps this will prove to be a short and gentle separation, to teach him to speak more humbly. There is no being in the universe that would send death to punish light, gay words, spoken from a joyful heart. If there were, I and many others should have been in our graves long since. Why, Erica! this is even a worse reason than Hund's word. Now just tell me, Erica, would you believe anything else that Hund said?"

"In a common way, perhaps not; but you cannot think what a changed man he is, Frolich. He is so humbled, so melancholy, so awe-struck, that he is not like the same man."

"He may not be the better for that. He was more frightened than anybody at the moment the owl cried, on your betrothment night, when you fancied that Nipen had carried off Oddo. Yet never did I see Hund more malicious than he was half an hour afterwards. I doubt whether any such fright would make a liar into a truthful man, in a moment."

Erica now remembered and told the falsehood of Hund about what he was doing when the boat was spirited away;—a falsehood told in the very midst of the humiliation and remorse she had described.

"Why there now!" exclaimed Frolich, ceasing her stirring for a moment to look round; "what a capital story that is! and how few people know it! and how neatly you catch him in his fib! And why should not something like it be happening now with Rolf? Rolf knows all the ins and outs of the fiord; and if he has been playing bo-peep with his enemies among the islands, and frightening Hund, (as he well knows how,) is it not the most natural thing in the world that Hund should come scampering home, and get his place, and say that he is

lost, while waiting to see whether he is or not?—O dear!" she exclaimed after a pause, during which Erica did not attempt to speak, "I know what I wish."

"You wish something kind, dear, I am sure," said Erica, with a deep sigh.

"We have so many—so very many nice, useful things—we can go up the mountains and sail away over the seas—and look far abroad into the sky—I only wish we could do one little thing more. I really think, having so many things, we might have had just one little thing more given us;—and that is wings. I grudge them to yonder screaming eagles when I want them so much."

"My dear child, what strange things you say!"

"I do so very much want to fly abroad, just for once, over the fiord. If I could but look down into every nook and cove between Thor islet and the sea, I would not be long in bringing you news. If I did not see Rolf, I would tell you plainly. Really, at such times it seems very odd that we have not wings."

"Perhaps the time may come, dear."

"I can never want them so much again."

"My dear, you cannot want them as I do, if I dared to say such bold things as you do. You are not weary of the world, Frolich."

"What! this beautiful world? Are you weary of it all, Erica?"

"Yes, dear."

"What! of the airy mountains, and the silent forests, and the lonely lakes, and the blue glaciers, with flowers fringing them! Are you quite weary of all these?"

"O, that I had wings like a dove! Then would I flee away, and be at rest." Erica hardly murmured these words; but Frolich caught them.

"Do you know," said she, softly, after a pause "I doubt whether we can find rest by going to any place, in this world or out of it, unless——if——. The truth is, Erica, I know my father and mother think that people who are afraid of selfish and revengeful spirits, such as demons and Nipen, can never have any peace of mind. Really, religious people have their way straight before them;—they have only to do right, and God is their friend, and they can bear everything, and need fear nothing. But the people about us are always in a fright about some selfish being or another not being properly humored, and so being displeased. I would not be in such bondage, Erica—no, not for the wings I was longing for just now. I should be freer if I were rooted like a tree, and without superstition, than if I had the wings of an eagle, with a belief in selfish demons."

"Let us talk of something else," said Erica, who was at the very moment considering where the mountain-demon would best like to have his gammel cheese laid. "What is the quality of the cream, Frolich? Is it as good as it ought to be?"

"Stiorna would say that the demon will smack his lips over it. Come and taste."

"Do not speak so, dear."

"I was only quoting Stiørna ——"

"What are you saying about me?" inquired Stiørna, appearing at the door. "Only talking about the cream and the cheese! Are you sure of that? Bless me! what a smell of the yellow flowers! It will be a prime cheese."

"How can you leave the cattle, Stiørna?" cried Erica. "If they are all gone when you get back ——"

"Well, come, then, and see the sight. I get scolded either way, always. You would have scolded me finely to-night if I had not called you to see the sight——"

"What sight?"

"Why, there is such a procession of boats on the fiord, that you would suppose there were three weddings happening at once."

"What can we do?" exclaimed Frolich, dolefully looking at the cream, which had reached such a point as that the stirring could not cease for a minute without risk of spoiling the cheese.

Erica took the long wooden spoon from Frolich's hand, and bade her run and see where the bishop (for no doubt it was the bishop) was going to land. The cream should not spoil while she was absent.

Frolich bounded away over the grass, declaring that if it was the bishop going to her father's, she could not possibly stay on the mountain for all the cheeses in Nordland. Erica remained alone, patiently stirring the cream, and hardly heeding the heat of the fire, while planning how the bishop would be told her story, and how he would examine Hund, and perhaps be able to give some news of the pirates, and certainly be ready with his advice. Some degree of hope arose within her as she thought of the esteem in which all Norway held the wisdom and kindness of the bishop of Tronøyem; and then again she felt it hard to be absent during the visit of the only person to whom she looked for comfort.

Frolich returned after a long while, to defer her hopes a little. The boats had all drawn to shore on the northern side of the fiord, where, no doubt, the bishop had a visit to pay before proceeding to Erlingsen's. The cheese-making might yet be done in time, even if Frolich should be sent for home, to see and be seen by the good bishop.

CHAPTER XII.—PEDER ABROAD.

THE day after Erica's departure to the dairy, Peder was sitting alone in his house, weaving a frail-basket. Sometimes he sighed to think how empty and silent the house appeared to what he had ever known it before. Ulla's wheel stood in the corner, and was now never to be heard, any more than her feeble, aged voice, which had sung ballads to the last. Erica's light, active step was gone for the present; and would it ever again be as light and active as it had been? Rolf's hearty laugh was silent; perhaps forever. Oddo was an inmate still, but Oddo was much altered of late; and who could wonder? Though the boy was strangely unbelieving about some things, he could not but feel how wonders and misfortunes had crowded

upon one another since the night of his defiance of Nipen.

From the hour of Hund's return, the boy had hardly been heard to speak. All these thoughts were too melancholy for old Peder; and to break the silence, he began to sing as he wove his basket.

He had nearly got through a ballad of a hundred and five stanzas, when he heard a footstep on the floor.

"Oddo, my boy," said he, "surely you are in early. Can it be dinner time yet?"

"No, not this hour," replied Oddo, in a low voice, which sank to a whisper as he said, "I have left Hund laying the troughs to water the meadow;* and if he misses me I don't care. I could not stay; I could not help coming; and if he kills me for telling you, he may; for tell you I must."

And Oddo went to close and fasten the door; and then he sat down on the ground, rested his arms on his grandfather's knees, and told his story in such a low tone that no "little bird" under the eaves could "carry the matter."

"O grandfather, what a mind that fellow has! He will go crazy with horror soon. I am not sure that he is not crazy now."

"He has murdered Rolf, has he?"

"I can't be sure; but the oddest thing is that he mixes up wolves with his rambling talk. Rolf can hardly have met with mischief from any wolf at this season."

"No, boy; not Rolf. But did not Hund speak of orphan children, and how wolves have been known to devour them when snow was on the ground?"

"Why, yes," said Oddo, surprised at such a guess.

"There was a reason for Hund's talking so of wolves, my dear. Tell me quick what he said of Rolf; and what made him say anything to you—to an inquisitive boy like you."

"He is like one bewitched that cannot hold his tongue. While I was bringing the troughs, one by one, for him to lay where the meadow was driest, he still kept muttering and muttering to himself. As often as I came within six yards of him, I heard him mutter, mutter. Then, when I helped him to lay the troughs, he began to talk to me. I was not in the mind to make him many answers; but on he went, just the same as if I had asked him a hundred questions."

"It was such an opportunity for a curious boy, that I wonder you did not."

"Perhaps I might, if he had stopped long enough. But if he stopped for a moment to wipe his brows, (for he was all trembling with the heat,) he began again before I could well speak. He asked me whether I had ever heard that drowned

* The strips of meadow which lie between high rocks in Norway would be parched by the reflection of the long summer sunshine, and unproductive, if the inhabitants did not use great industry in the irrigation of their lands. They conduct water from the spring heads, by means of hollow trunks of trees laid end to end, through which water flows in the directions in which it is wanted, sometimes for an extent of fifty miles from one spring.

men could show their heads above water, and stare with their eyes, and throw their arms about, a whole day—two days, after they were drowned.”

“Ay! Indeed! Did he ask that?”

“Yes, and several other things. He asked whether I had ever heard that the islets in the fiord were so many prison houses.”

“And what did you say?”

“I wanted him to explain; so I said they were prison-houses to the eider-ducks when they were sitting, for they never stir a yard from their nest. But he did not hear a word I spoke. He went on about drowned men being kept prisoners in the islets, moaning because they can’t get out. And he says they will knock, knock, as if they could cleave the thick hard rock.”

“What do you think of all this, my boy?”

“Why, when I said I had not heard a word of any such thing, even from my grandmother or Erica, he declared he had heard the moans himself—moaning and crying; but then he mixed up something about the barking of wolves that made confusion in the story. Though he had been hot just before, there he stood shivering, as if it was winter, as he stood in the broiling sun. Then I asked him if he had seen dead men swim and stare, as he said he had heard them moan and cry.”

“And what did he say then?”

“He started bolt upright, as if I had been picking his pocket. He was in a passion for a minute, I know, if ever he was in his life. Then he tried to laugh as he said what a lot of new stories—stories of spirits, such stories as people love—he should have to carry home to the north, whenever he went back to his own place.”

“In the north—his own place in the north! He wanted to mislead you there, boy. Hund was born some way to the south.”

“No, was he really! how is one to believe a word he says, except when he speaks as if he was in his sleep—straight out from his conscience, I suppose! He began to talk about the bishop next, wanting to know when I thought he would come, and whether he was apt to hold private talk with every sort of person at the houses he stayed at.”

“How did you answer him? You know nothing about the bishop’s visits.”

“So I told him; but, to try him, I said I knew one thing—that a quantity of fresh fish would be wanted when the bishop comes with his train; and I asked him whether he would go fishing with me as soon as we should hear that the bishop was drawing near.”

“He would not agree to that, I fancy.”

“He asked how far out I thought of going. Of course, I said to Vogel islet—at least as far as Vogel islet. Do you know, grandfather, I thought he would have knocked me down at the word! He muttered something, I could not hear what, to get off. By that time we were laying the last trough. I asked him to go for some more; and the minute he was out of sight I scampered here.

Now, what sort of a mind do you think this fellow has!”

“Not an easy one, it is plain. It is too clear also that he thinks Rolf is drowned.”

“But do you think so, grandfather?”

“Do you think so, grandson?”

“Not a bit of it. Depend upon it, Rolf is all alive, if he is swimming and staring, and throwing his arms about in the water. I think I see him now. And I will see him, if he is to be seen alive, or dead.”

“And pray, how?”

“I ought to have said if you will help me. You say sometimes, grandfather, that you can pull a good stroke with the oar still; and I can steer as well as our master himself; and the fiord never was stiller than it is to-day. Think what it would be to bring home Rolf, or some good news of him! We would have a race up to the seater afterwards to see who could be the first to Erica.”

“Gently, gently, boy! What is Rolf about not to come home, if he is alive?”

“That we shall learn from him. Did you hear that he told Erica he should go as far as Vogel islet, dropping something about being safe there from pirates and everything?”

Peder really thought there was something in this. He sent off Oddo to his work in the little meadow, and himself sought out Madame Erlingsen, who, having less belief in spirits and enchantments than Peder, was in proportion more struck with the necessity of seeing whether there was any meaning in Hund’s revelations, lest Rolf should be perishing for want of help. The story of his disappearance had spread through the whole region; and there was not a fisherman on the fiord who had not, by this time, given an opinion as to how he was drowned. But madame was well aware that, if he were only wrecked, there was no sign that he could make that would not terrify the superstitious minds of the neighbors, and make them keep aloof, instead of helping him. In addition to all this, it was doubtful whether his signals would be seen by anybody, at a season when every one who could be spared was gone up to the dairies.

As soon as Hund was gone out after dinner, the old man and his grandson put off in the boat, carrying a note from Madame Erlingsen to her neighbors along the fiord, requesting the assistance of one or two rowers on an occasion which might prove one of life and death. The neighbors were obliging. The Holbergs sent a stout farm-servant with directions to call at a cousin’s, lower down, for a boatman; so that the boat was soon in fast career down the fiord—Oddo full of expectation, and of pride, in commanding such an expedition; and Peder being relieved from all necessity of rowing more than he liked.

Oddo had found occasionally the truth of a common proverb—he had easily brought his master’s horses to the water, but could not make

them drink. He now found that he had easily got rowers into the boat, but that it was impossible to make them row, beyond a certain point. He had used as much discretion as Peder himself about not revealing the precise place of their destination; and when Vogel islet came in sight, the two helpers at once gave him hints to steer so as to keep as near the shore, and as far from the island, as possible. Oddo gravely steered for the island, notwithstanding. When the men saw that this was his resolution, they shipped their oars, and refused to strike another stroke, unless one of them might steer. That island had a bad reputation; it was bewitched or haunted; and in that direction the men would not go. They were willing to do all they could to oblige; they would row twenty miles without resting, with pleasure; but they would not brave Nipen, nor any other demon, for any consideration.

"How far off is it, Oddo?" asked Peder.

"Two miles, grandfather. Can you and I manage it by ourselves, think you?"

"Ay, surely; if we can land these friends of ours. They will wait ashore till we call for them again."

"I will leave you my supper, if you will wait for us here, on this head-land," said Oddo to the men.

The men could make no other objection than that they were certain the boat would never return. They were very civil—would not accept Oddo's supper on any account—would remain on the watch—wished their friends would be persuaded; and, when they found all persuasion in vain, declared they would bear testimony to Erica, and, as long as they should live, to the bravery of the old man and boy who thus threw away their lives in search of a comrade who had fallen a victim to Nipen.

Amidst these friendly words, the old man and his grandson put off once more alone, making straight for the islet. Of the two Peder was the greater hero, for he saw the most ground for fear.

"Promise me, Oddo," said he, "not to take advantage of my not seeing. As sure as you observe anything strange, tell me exactly what you see."

"I will, grandfather. There is nothing yet but what is so beautiful that I could not, for the life of me, find out anything to be afraid of. The water is as green as our best pasture, as it washes up against the grey rock. And that grey rock is all crested and tufted with green again, wherever a bush can spring. It is all alive with sea-birds, as white as snow, as they wheel above it in the sun."

"'Tis the very place," said Peder, putting new strength into his old arm. Oddo rowed stoutly too, for some way; and then he stopped to ask on what side the remains of a birch ladder used to hang down, as Peder had often told him.

"On the north side; but there is no use in looking for that, my boy. That birch ladder must

have rotted away, with frost and wet, long and long ago."

"It is likely," said Oddo; "but, thinking that some man must have put it there, I should like to see whether it really is impossible for one with a strong hand and light foot to mount this wall. I brought our longest boat-hook, on purpose to try. Where a ladder hung before, a foot must have climbed; and if I mount, Rolf may have mounted before me."

It chilled Peder's heart to remember the aspect of the precipice which his boy talked of climbing; but he said nothing, feeling that it would be in vain. This forbearance touched Oddo's feelings.

"I will run into no folly, trust me," said he. "I do not forget that you depend on me for getting home; and that the truth, about Nipen and such things, depends, for an age to come, on our being seen at home again safe. But I have a pretty clear notion that Rolf is somewhere on the top there."

"Suppose you call him, then."

Oddo had much rather catch him. He pictured to himself the pride and pleasure of mastering the ascent; the delight of surprising Rolf asleep in his solitude, and the fun of standing over him to waken him, and witness his surprise. He could not give up the attempt to scale the rock; but he would do it very cautiously.

Slowly and watchfully they passed round the islet, Oddo seeking with his eye any ledge of the rock on which he might mount. Pulling off his shoes, that his bare feet might have the better hold, and stripping off almost all his clothes, for lightness in climbing and perhaps swimming, he clambered up to more than one promising spot, and then, finding that further progress was impossible, had to come down again. At last, seeing a narrow chasm filled with leafy shrubs, he determined to try how high he could reach by means of these. He swung himself up by means of a bush which grew downwards, having its roots firmly fixed in a crevice of the rock. This gave him hold of another, which brought him in reach of a third; so that, making his way like a squirrel or a monkey, he found himself hanging at such a height, that it seemed easier to go on than to turn back. For some time after leaving his grandfather, he had spoken to him, as an assurance of his safety. When too far off to speak, he had sung aloud, to save the old man from fears; and now that he did not feel at all sure whether he should ever get up or down, he began to whistle cheerily. He was pleased to hear it answered from the boat. The thought of the old man sitting there alone, and his return wholly depending upon the safety of his companion, animated Oddo afresh to find a way up the rock. It looked to him as like a wall as any other rock about the islet. There was no footing where he was looking;—that was certain. So he advanced further into the chasm, where the rocks so nearly met that a giant's arm might have touched the opposite wall. Here there was promise of release from

his dangerous situation. At the end of a ledge, he saw something like poles hanging on the rock—some work of human hands, certainly. Having scrambled towards them, he found the remains of a ladder, made of birch poles, fastened together with thongs of leather. This ladder had once, no doubt, hung from top to bottom of the chasm; and its lower part, now gone, was that ladder of which Peder had often spoken as a proof that men had been on the island.

With a careful hand, Oddo pulled at the ladder; and it did not give way. He tugged harder, and still it only shook. He must try it; there was nothing else to be done. It was well for him now that he was used to dangerous climbing—that he had had adventures on the slippery, cracked glaciers of Sulitelma, and that being on a height, with precipices below, was no new situation to him. He climbed, trusting as little as possible to the ladder, setting his foot in preference on any projection of the rock, or any root of the smallest shrub. More than one pole cracked; more than one fastening gave way, when he had barely time to shift his weight upon a better support. He heard his grandfather's voice calling, and he could not answer. It disturbed him, now that his joints were strained, his limbs trembling, and his mouth parched so that his breath rattled as it came.

He reached the top, however. He sprang from the edge of the precipice, unable to look down, threw himself on his face, and panted and trembled, as if he had never before climbed anything less safe than a staircase. Never before, indeed, had he done anything like this. The feat was performed—the islet was not to him inaccessible. This thought gave him strength. He sprang to his feet again, and whistled, loud and shrill. He could imagine the comfort this must be to Peder; and he whistled more and more merrily till he found himself rested enough to proceed on his search for Rolf. He went briskly on his way, not troubling himself with any thoughts of how he was to get down again.

Never had he seen a place so full of water-birds and their nests. Their nests strewed all the ground; and they themselves were strutting and waddling, fluttering and vociferating, in every direction. They were perfectly tame, knowing nothing of men, and having had no experience of disturbance. The ducks that were leading their broods allowed Oddo to stroke their feathers; and the drakes looked on, without taking any offence.

"If Rolf is here," thought Oddo, "he has been living on most amicable terms with his neighbors."

After an anxious thought or two of Nipen—after a glance or two round the sky and shores for a sign of wind—Oddo began in earnest his quest of Rolf. He called his name—gently—then louder.

There was some kind of answer. Some sound of human voice he heard, he was certain; but so muffled, so dull, that whence it came he could not

tell. It might even be his grandfather, calling from below. So he crossed to quite the verge of the little island, wishing with all his heart that the birds would be quiet, and cease their civility of all answering when he spoke. When quite out of hearing of Peder, Oddo called again, with scarcely a hope of any result, so plain was it to his eyes that no one resided on the island. On its small summit there was really no intermission of birds' nests;—no space where any one had lain down;—no sign of habitation—no vestige of food, dress, or utensils. With a saddened heart, therefore, Oddo called again; and again he was sure there was an answer; though whence and what he could not make out.

He then sang a part of a chant that he had learned by Rolf singing it as he sat carving his share of the new pulpit. He stopped in the middle, and presently believed that he heard the air continued, though the voice seemed so indistinct, and the music so much as if it came from underground, that Oddo began to recall, with some doubt and fear, the stories of the enchantment of the place. It was not long before he heard a cry from the water below. Looking over the precipice he saw what made him draw back in terror; he saw the very thing Hund had described—the swimming and staring head of Rolf, and the arms thrown up in the air. Not having Hund's conscience, however, and having much more curiosity, he looked again; and then a third time.

"Are you Rolf, really?" asked he, at last.

"Yes; but who are you—Oddo or the demon—up there where nobody can climb? Who are you?"

"I will show you. We will find each other out," thought Oddo, with a determination to take the leap, and ascertain the truth.

He leaped, and struck the water at a sufficient distance from Rolf. When he came up again, they approached each other, staring, and each with some doubt as to whether the other was human or a demon.

"Are you really alive, Rolf?" said the one.

"To be sure I am, Oddo," said the other; "but what demon carried you to the top of that rock, that no man ever climbed?"

Oddo looked mysterious, suddenly resolving to keep his secret for the present.

"Not that way," said Rolf. "I have not the strength I had, and I can't swim round the place now. I was just resting myself when I heard you call, and came out to see. Follow me home."

He turned, and began to swim homewards. Oddo had the strongest inclination to go with him, to see what would be revealed; but there were two objections. His grandfather must be growing anxious; and he was not perfectly sure yet whether his guide might not be Nipen in Rolf's likeness, about to lead him to some hidden prison.

"Give me your hand, Rolf," said the boy, bravely.

It was a real, substantial, warm, hand.

"I don't wonder you doubt," said Rolf, "I can't look much like myself—unshaven, and shrunk, and haggard as my face must be."

Oddo was now quite satisfied; and he told of the boat and his grandfather. The boat was scarcely further off than the cave; and poor Rolf was almost in extremity for drink. The water and brandy he brought with him had been finished nearly two days, and he was suffering extremely from thirst. He thought he could reach the boat, and Oddo led the way, bidding him not mind his being without clothes till they could find him some.

Glad was the old man to hear his boy's call from the water; and his face lighted up with wonder and pleasure when he heard that Rolf was not far behind. He lent a hand to help him into the boat, and asked no questions till he had given him food and drink. He reproached himself for having brought neither camphor nor assafœtida, to administer with the corn-brand. Here was the brandy, however; and some water, and fish, and bread, and cloud-berries. Great was the amazement of Peder and Oddo at Rolf's pushing aside the brandy, and seizing the water. When he had drained the last drop, he even preferred the cloud-berries to the brandy. A transient doubt thence occurred, whether this was Rolf, after all. Rolf saw it in their faces, and laughed; and when they had heard his story of what he had suffered from thirst, they were quite satisfied, and wondered no longer.

He was all impatience to be gone. It tried him more now to think how long it would be before Erica could hear of his preservation than to bear all that had gone before. Being without clothes, however, it was necessary to visit the cave, and bring away what was there. In truth, Oddo was not sorry for this. His curiosity about the cave was so great that he felt it impossible to go home without seeing it; and the advantage of holding the secret knowledge of such a place was one which he would not give up. He seized an oar, gave another to Rolf; and they were presently off the mouth of the cave. Peder sighed at their having to leave him again; but he believed what Rolf said of there being no danger, and of their remaining close at hand. One or the other came popping up beside the boat, every minute, with clothes, or net, or lines, or brandy-flask, and finally with the oars of the poor broken skiff; being obliged to leave the skiff itself behind. Rolf did not forget

to bring away whole handfuls of beautiful shells, which he had amused himself with collecting for Erica.

At last they entered the boat again; and while they were dressing, Oddo charmed his grandfather with a description of the cave—of the dark, sounding walls, the lofty roof, and the green tide breaking on the white sands. It almost made the listener cool to hear of these things; but, as Oddo had remarked, the heat had abated. It was near midnight, and the sun was going to set. Their row to the shore would be in the cool twilight; and then they should take in companions, who, fresh from rest, would save them the trouble of rowing home.

When all were too tired to talk, and the oars were dipping somewhat lazily, and the breeze had died away, and the sea-birds were quiet, old Peder, who appeared to his companions to be asleep, raised his head, and said,

"I heard a sob. Are you crying, Oddo?"

"Yes, grandfather."

"What is your grief, my boy?"

"No grief—anything but grief now. I have felt more grief than you know of though, or anybody. I did not know it fully myself till now."

"Right, my boy; and right to say it out too."

"I don't care now who knows how miserable I have been. I did not believe, all the time, that Nipen had anything to do with these misfortunes—"

"Right, Oddo!" exclaimed Rolf, now.

"But I was not quite certain; and how could I say a word against it when I was the one to provoke Nipen? Now Rolf is safe, and Erica will be happy again, and I shall not feel as if everybody's eyes were upon me, and know that it is only out of kindness that they do not reproach me as having done all the mischief, I shall hold up my head again now—as some may think I have done all along; but I did not, in my own eyes—no, not in my own eyes, for all these weary days that are gone."

"Well, they are gone now," said Rolf. "Let them go by and be forgotten."

"Nay—not forgotten," said Peder. "How is my boy to learn if he forgets—"

"Don't fear that for me, grandfather," said Oddo, as the tears still streamed down his face.

"No fear of that. I shall not forget these last days;—no, not as long as I live."

MYRIADS OF ANIMALCULES.—In the Arctic seas, where the water is pure transparent ultramarine color, parts of twenty or thirty square miles, 1,500 feet deep, are green and turbid, from the vast numbers of minute animalcules. Captain Scoresby calculated it would require 80,000 persons, working unceasingly from the creation of man to the present day, to count the number of insects contained in two miles of the green water. What, then, must be the amount of animal life in the Polar regions, where one fourth of the Greenland sea, for 10 degrees of latitude, consists of that water!

CHANGES IN SOLID FORMS.—The gradual change of form of a body which still continues solid, is a problem at which many are confounded, because they cannot imitate the great experiment of nature. On a grand scale, it does not hold; but, in a smaller way, the barley sugar, which, in course of time, becomes crystalline and dull, presents an example of change of structure without any alteration of its solidity; and copper coins, buried in the earth, become oxidized without losing their impressions.—*Herr Karl Bruner, jun.*

CORRESPONDENCE.

Paris, 11th October, 1848.

THE celebrated Dr. Strauss, author of the *Life of Jesus*, a *bonne bouche* for erudite infidels—was lately elected a deputy in the legislature of Wurtemberg; in his maiden speech, said to be very eloquent, he declares for constitutional monarchy, against all radicalism and all republicanism.

The name of *Washington* is now constantly invoked in the French Assembly and the Paris journals, as the unique pattern of a republican chief and perfect patriot in modern history. *La Réforme*, opposed to the idea of any president for France, asks—"Whom would you elect president? *Washington is dead*." At the sitting of the Assembly on the 9th inst., a member of the Mountain moved that all military commanders be declared ineligible to that office, and argued on the testimony of all history, as to the danger and evil. Cry from many groups on the floor—"And what of *Washington*!" A representative of considerable merit, urging the reëligibility of the president, without intermission, said—"Whatever we may style ourselves—republicans of this or that date—we know the republic, as yet, only as a theory. Our business is now to have it in practice. All of us, without exception, need lessons—we should all, look for instruction where it has been carried into effect with success and with glory. Direct your eyes to America, to the United States. There the republic is not a simple conception—a sheer theory; it is a thing gloriously realized; a mighty fact. Well, in the United States, as you know, the president is reëligible. By the text of the constitution, he is indefinitely so; but, in practice, he is only once so, and immediately on the expiration of his first term. This seeming contradiction—this anomaly, in some degree sublime—is easily explained: the constitution is the law of laws; it is *right par excellence*. Now, the Americans, who regard and value principles first—above everything else—did not deem it well to insert a provision contrary to the political right, the most sacred for them—that of the freedom of suffrage. However, they could not forget the form of their government—and for this they have their reasons; their patriotism contrived to bring about what could not be in their constitution; they established it as usage that the president should be reëlected but once—twice only consecutively." Another member, Lacrosse, contending for the choice of president by electors, as in the United States, ascribed to this part of our system, the magnificent development for the sixty years past of the American republic. "It is by this mode of election," he added, "that America has gained those illustrious chiefs of the executive power, who, by their disinterestedness, their personal self-denial, have endowed the world with the noblest example of public virtues; it is in the same way that the Union procured the other great functionaries who have pages so bright in the history of their country. Look to the diplomatic conquest

of Oregon, which a president so ably achieved; look to the conquest of Mexico, to the splendid position of the republic on the Pacific Ocean," &c. &c.

In reply to these remarks, it was said—"Monsieur Lacrosse tells us that the plan which he proposes is executed in America; the president is made by a double election. Undoubtedly; but the representatives are appointed in the same way and all citizens are not voters; there is a property qualification; and when exceptions are admitted, it is of little consequence whether they be more or less. Moreover, has this system really produced in the United States the excellent results so much emblazoned? I am greatly mistaken if I have not read in American history, that the best candidate does not always succeed. The country is separated into two camps; the man is set aside, who will not consent to enter into one or the other—whatever may be his merit. To reach the sovereign magistracy of the presidency, it is necessary for the citizen to be of a *party*, and as a consequence, if he be carried, to act with less independence than the national weal may require." Here are specimens of the different views taken in the Assembly, of our institutions—mistakes of fact; and some truth to serve as just pride or salutary admonition.

Among the most remarkable speeches in the Assembly, last week, was one of Ledru-Rollin—a formal profession and advocacy of the doctrines and purposes of the red republic—armed propaganda; alliances with *nations*, not with governments; immediate and immense issue of paper money; war for Italian independence or for German unity and democratic freedom: no executive chief, but a ministry of the choice, and under the constant control, of a national convention; progressive taxation by which to level all fortunes. He quoted Washington's advice to our Union against foreign alliances—the monarchies being necessarily and essentially hostile to republics; the French Assembly should sanction no diplomatic conjunction of France with England for any purpose; they had pledged themselves to the independence of Italy. In America, he suggested—Congress lays down principles for diplomatic negotiations and external policy, which the executive is obliged to follow. But the Assembly, after earnest debate, passed to the order of the day at the request of Cavaignac, refusing to refer even to their declaration of May in behalf of Italian independence. Nevertheless, the minister of foreign affairs, being interrogated touching his acceptance of the vote, replied that the executive would still consider itself bound by the declaration of May; from which it was inferred that he, the minister, at least, wished to involve the government in an armed intervention, if the diplomatic mediation with the Austrians should fail. A great majority of the Assembly are decidedly averse to war. The *National*, (semi-official organ,) of yesterday, says, "It was believed in Hungary that Austria is decided to get peace in Italy by sacrifices, in

order to be able to put down the Hungarian revolution at once. If such be the aim, the obligations of our republic towards Italy would extend to Hungary." The Assembly can never be persuaded or driven to that degree of Quixotism.

On Friday last, the cardinal question, Whether the president of the French Republic should be elected by universal suffrage, or by the National Assembly directly, came up for discussion. The galleries were thronged at an early hour; the house had few vacant seats. It was known that the extreme democratic division, the Mountain—the radical journals—the executive chief and the ministers—and the whole *coterie* of the *National*, including the speaker of the Assembly, were opposed to the first scheme, and had prepared themselves with every intimation and parliamentary manœuvre by which the second plan, or a first or provisional election by the Assembly, might be achieved. The draft of the constitution prescribed the principle of universal suffrage; the legitimists preferred this, of course, because most favorable to the exertion of their influence in the interior; the ex-deputies and the Orleanists in general regarded it as opening the best chances for a monarchical choice or a moderate and orderly republic; every one believed it to be propitious for Henry V. and Napoleon Louis: this risk, however, they held less formidable than the gratification of the views of the *Mountain* and the *coterie* of the *National*. Among the extracts which I enclose for you, you may find an amusing specimen of the first day's debate. On the 2d, Lamartine reaped all the honors, and produced indescribable sensation, by a splendid harangue in behalf of the right of the people to the selection of the executive chief, and the expediency or necessity of yielding it at once, whatever the consequences to be apprehended. He insisted that *the die was cast* as to the universal application of universal suffrage; it must be stood—the hazard—reaching even, as it did, the perdition of the republic, the restoration of monarchy, or the establishment of military despotism. The harangue clashed with his famous speech of the 27th ult., the purport of which is stated in one of my antecedent epistles. But the poet-politician cannot be consistent; a journalist, admiring his rhetorical powers, observes—"We require, indeed, a towering and vigorous chief for the republic; but Lamartine is not the man; he is too variable; too easily acted upon; he resembles an *Æolian harp*, which sounds—admirably it is true—under the wind from what direction soever it may happen to blow." Other editors are not charitable: one says—"M. Lamartine has made a presidential speech; it is a manifesto of candidature." Another—"He disposed of all the pretenders to clear the road for himself; he knew that he had less chance with the Assembly than with the masses." He adduced his belief that if France was not republican by her habits, if "she was still monarchial by her vices," she was republican in her ideas. Evidently, however, at the close of the speech, he desponded; he con-

templated a bottomless gulf yawning for the whole system which he had proclaimed at the Hotel de Ville. As he repudiated American example in the question of a senate, so he did in that of the presidency.

I yesterday listened with sincere and conscientious anxiety to the remarks which were made by an hon. representative, (M. Parieu,) but the considerations developed by that hon. gentleman are not new to me. I have also read and studied the constitutions of other nations in which monarchy has recoiled before the forms of liberty. I am acquainted with the United States, with Venice, and Genoa; I am aware in our own history of the system of '93; I have seen that combined mechanism according to which twenty-five candidates were pointed out, from amongst whom was to be chosen the president of the republic; I have endeavored to render to myself an account of all these systems, and I declare that I have there found no information, no certain evidence, no application of a great and general principle which could enlighten our minds. M. Parieu yesterday adduced the example of the United States, of Switzerland, and of Holland, where the nomination of the presidents was made by two degrees—even by three degrees in one of those republics; but, he must allow me to observe, that that example applies as badly to the question of the nomination of the president as to that of the single chamber. Those republics which have been cited to us are federal states; what was to be personified in their presidents was not the expression of individual value, but of a federation. That is the secret of the constitutions of those countries. But France has nothing analogous to these federations, which are held up to us as examples, without understanding the nature and the necessities of our country.

All the seven or more amendments by which the ultra-democrats and the government party labored to devolve on the Assembly the election roundly or virtually—for the nonce if not in perpetuity, failed in a degree beyond the expectation of the most sanguine advocates of the text of the constitution. The decision by a vote of 627 to 130 was as follows:—"The president is nominated by ballot, and by a majority of the votes, by the direct suffrage of all the electors of the French departments and of Algeria." It was further decided, that the minimum of suffrages necessary to make a president shall be two millions; and if no candidate be returned with that or more, then the Assembly to choose a president out of the five highest candidates. An amendment was rejected which excluded the descendants of the families that have reigned in France. Prince Louis Napoleon took this occasion to aver that he rejected the appellation of *pretender*, which was constantly "thrown at his head." He cuts a poor figure in the tribune. His German accent offends French ears; the real Napoleon, though he disdained ambitious oratory, could pronounce a laconic address of irresistible impression. The prince, though watched from floor and gallery, seems rather forlorn, or suffering ennui, in his place, he sits with his arms crossed and his head on his shoulder, as if there was nothing for him

in that Assembly to do or to hope. He can boast of having been returned by five departments—three hundred thousand voters in all; he has concluded to be the representative of Paris, which relieves us from another election. A very well-informed member of the Assembly, in conversation with me yesterday, mentioned his belief that the southern and western provinces will vote for Henry V.; some of the middle and northern for Napoleon Louis, and some for the Prince de Joinville; none of them would care for the old out-lawry of the royal family. General Cavaignac might have calculated on a considerable number of adherents; but the act of voting against a choice by the people must affect his popularity in the interior, and will certainly be turned to account by his adversaries. The question remaining before the Assembly is, shall the election take place immediately, or after the whole constitution has been voted and revised, or after the organic laws have been enacted? Cavaignac and his ministers express their desire of an election next month, as the committee on the constitution think that their work will be carried through by the end of the present. The grossest inconsistency and self-contradiction are so common here that we can scarcely be surprised at any instance, but we may remark the extreme boldly manifested by the chief authors and agents of the revolution of February, touching universal suffrage, which was their special creed, their grand arcanum, their battle-cry. The *National* admitted that it might be well to introduce, as a principle, into the constitution, the election of president by the people; but the application or fruition of it should be adjourned, on account of the momentary portentous dangers of the republic. The adjournment, as planned, would have been *sine die*, and for the indefinite prolongation of the absolute rule of the bureau and instruments of the *National*. But the organs of the ultra-radicals and the socialists hold a stronger language. For example, the *Démocratie Pacifique*, of which the editor is in the Assembly: "Until all Frenchmen be enlightened, and as long as universal suffrage shall be far above the average intellect of the country, while the exercise of it is pregnant with dangers, the Assembly are imperatively bound to regulate and limit its application." *La Réforme*, conducted by Flocon, a representative, and ex-minister of commerce, treats the decision of the Assembly in this strain: "The house was excessively feverish and agitated; you might perceive that when about to give a vote which was to afford legal scope to the dynastic aspirations, it was a prey to the distressing presentiment of the calamities and crises which the pretenders prepare for France. The majority, however, ventured to the last hazard. The new republicans, who once deprecated universal suffrage, manifested the most scrupulous tenderness for this indefeasible right of their adored sovereignty of the people—with the spirit of Judas. The deed is done. If universal suffrage, betrayed by ignorance, wretchedness, or illusive reminis-

cences, should err so far to choose a pretender, we must bow to its majesty; according to the committee and the house, no one citizen whatever can be excluded, even for the public safety, without violating fundamental law. Wonderful this, and grieved we are, truly, that the Assembly did not at once repeal the decree which exiled that charming young gentleman, the descendant of Henry IV., and the whole nest of the Orleans family. May not the people in the plenary exercise of their sovereignty, annul, to-morrow, the decree, and consecrate, by their votes, the pretensions of Henry V. or the Prince de Joinville? Huzza, gentlemen! let us have a royal president, with his council of ministers, as of old. Alas, poor republic, may God have you in his holy keeping! Better would seem hereditary monarchy with its charter and its *prestige*, than the arrangement to which you assign the title of republican government. The instincts, the hopes, the ideas, of the revolution have been crushed; the real people and their men are proscribed; we have but to mourn the extinction of our liberties. A president—that is, a master: justice has become impossible; intrigue and selfishness prevail; our noble work of February perishes; a few of us survive, indeed, clinging to the masts of the sinking ship. Still, the campaign is not over; we know these cunning tacticians, these parliamentary heroes; they never dared to stand battle elsewhere—the *battle of blood*. We are resolved—the pretender chosen by the urn, whoever he may be, will have to fight for his sovereign prerogative—our party will die to a man, rather than brook a royalty."

The *Journal des Débats*, of yesterday, presents M. Chevalier's seventh study on the constitution of the United States. It treats in particular of the stages and effects of American paper money; to which the writer attributes much good and much evil. His outline from the commencement of our revolution is impartial, but he does not appear so amply informed touching the continental money, as he would have been, if he had read Mr. Samuel Breck's dissertation on that subject, and certain reports to Congress. He derives sound lessons for France; dealing skilfully, likewise, with the story of French assignats, and the gigantic schemes of Ledru-Rollin. He observes—"The United States are our masters in all republican matters." He styles the French year 1793, to which Ledru and his *scarlet* brethren appeal, "The infernal parody of a republic." "The secret," he adds, "of American prosperity, lies in the love of regular labor, and uniform respect for the laws." Remark the language of the *London Times* of the 7th inst. "For three years nearly all Europe has been plagued with poverty, despondency and mutual distrust, and with actual famine." Compare with this picture, your condition, the very reverse, during the same term, notwithstanding your Mexican war—not to say how vast your gains, as a balance, by your treaty, and how rich your harvest of military renown—

how beneficial for you in every respect, the impression which this manifestation of your means and energies has left on the world. To resume the topic of paper currency. The French, in general, are sensitive bullionists; their prejudice against paper is inordinate, and M. Chevalier, himself, has often striven to correct the popular notions, by detailing the advantages which may accrue from a currency duly mixed. In revolutionary times, the antipathy of the commercial and proprietary classes becomes, naturally keener and more distrustful. It operates on the exchange specially, since the political mystagogues and the oracles of the red republic have entered into a sort of conspiracy to inundate France with bank-notes, and fantastic bills of credit. Some of their projects require an emission beyond the amount of the total of the circulating medium of Europe. France is believed, however, to possess now half the sum of all the specie-circulation of this quarter of the globe, which is estimated at six billions of francs. Yesterday afternoon, the Assembly undertook the bill submitted by the committee on agriculture, for an emission of notes guaranteed by real property, to the extent of two milliards—four hundred millions of dollars. M. Thiers discussed this vexed question of *credit foncier*, in the negative, in a speech of two hours, which enchained the attention and determined the already adverse opinions of the house. The bill is rejected by 578 to 210 votes. The exchange is quieted by this result, and the repeated declarations of the minister of the treasury, that he will inflexibly resist any further issues of paper-money as a legal tender. More, hereafter, of this very instructive and strange debate. Socialist Proudhon is getting up a rather comical *Bank of the People*—capital, four millions of francs; shares twenty-five; a hundred and thirty-five articles in the scheme; none except manual laborers or artisans to be stockholders; a hundred functionaries—socialists or political convicts—to wear a uniform and a glazed hat with the inscription, *Bank of the People*; to rendezvous every morning and march under Proudhon's command.

Paris, 12th Oct., 1848.

THE weather has continued beautiful and warm. We enjoyed the sun of May in September; at this rate, observe some of the scribblers, we may have July in December. All the parterres of the garden of the Tuileries, which I see from the window of my study, exhibit the richest verdure; between 3 and 5 o'clock the garden swarms with well-dressed children and their nurses, and ladies and gentlemen in fashionable attire, with a multitude of mere loungers of respectable aspect. The blouses appear there no longer. In an hour's walk, yesterday, between 4 and 6, over the boulevards, I noted the crowds of pedestrians, as of yore, with the old vivacity of step and mien; the open shops were frequented, but the number closed is everywhere more considerable than within the thirty or thirty-five years past. We are told of a revival of busi-

ness at Lyons, which, certainly, was not expedited by the recent exploits of the *garde mobile* of that city. The pay of these youth not having been duly received, they took possession of the Hotel de Ville, and kept prisoners, for some hours, the prefect and other authorities. After two days of military array and defiance on both sides, the arrival and distribution of the money terminated the revolt. Detachments of the garrisons of the interior are employed, yet, in several of the provinces, in putting down resistance of the peasantry to the tax-gatherers. Yesterday afternoon, the National Assembly rescinded the old decree of banishment of the Bonaparte family, without dissent. But the organs of the red republic complain, this day, of the imprudent lenity. An animated debate followed on a motion, long pending, that no journal should be suspended by the executive, even during the maintenance of the *état de siège*, or martial law. It was argued again that the Draconian laws lately passed about the press, should suffice; and the common-places touching liberty of opinion and publication were vehemently declaimed. Cavaignac remained silent; his minister of justice argued that the Assembly had already refused to interfere in the matter, and had sanctioned the proceedings of the executive; the circumstances which compelled the government to resort to them, existed without sensible improvement; there was the same necessity for absolute control; he moved the previous question. The affirmative vote was 345 to 336—very close, and very significant for the executive. If Cavaignac had exercised less partiality in his visitations, his majority would have been large.

It is affirmed, to-day, that he will at once remove the interdicts; every friend of order and security may regret this practical interpretation of the vote. Nuisances enough were tolerated. He is personally assailed—bitterly reviled—by *La Presse* and a few other sheets of consequence. Every advantage is taken of his declaration that he would disregard what related to himself or his family alone. Our garrison, this winter, is to consist of fifty thousand troops, including the *garde mobile*, and the republican guard; it is dubbed *the army of occupation*. The larger the better. Our municipal councils announce that they need an eleemosynary fund of nine millions of francs for the interval ending April next, and that the number of the distressed to share the fund may reach three hundred thousand. The cholera, being in London, will probably cross the channel. What will then be the situation of Paris? The climax is fearful. Yesterday it was widely believed that substitutions in the ministry of Cavaignac would be proclaimed this morning. The general was to relieve himself in part from the influences and associations of the *National*, and enlist such coadjutors as Bedeau, Dufaure, Vivien, De Tocqueville, who now command a majority in the Assembly. But, methinks, affairs are not quite ripe for the coalition. Lamartine's organ, *Le Bien Public*, recommends it this day, strenuously. The colored gentlemen, elected

in Martinique, to the Assembly, are not quite sure of their seats; an inquiry is to be prosecuted into the regularity of the proceedings. There was some curiosity on the first entrance of one of them, but it has wholly ceased. The caricatures of the *representatives* from the menagerie of the garden of plants are as facetious as they are impudent. Satire and burlesque have not been spared with reference to the recent peace-congress at Brussels, where Mr. Burrit, of Massachusetts, held a conspicuous station. The purpose of such a convocation, though deemed chimerical, should be esteemed; I would not find fault, except, perhaps, in relation to the eulogy, without stint, which the members of these philanthropic congresses always begin by pronouncing on each other's superlative labors and merits.

You have marked, no doubt, the material European events of the month—the mob-march on the National Assembly at Frankfort, like the invasion of our Assembly in May—and with like results; the conflicts at Cologne and imposition of the law-martial; the military riots at Potsdam; the troubles at Vienna; the successful rebellion at Leghorn; the republican and abortive enterprise in the grand duchy of Baden; the remonstrances of Austria, backed by the German imperial government, with Switzerland; the fresh revolutionary or anti-Russian combinations in Moldavia and Wallachia, destined to be speedily and fully suppressed; the repugnance and argumentative resistance of the court of Naples to the British and French mediation in behalf of the Sicilians, and the clouds which have thickened over the negotiations concerning the fate of Italy.

Our most important foreign scene is the struggle between Austria and Hungary; the *Journal des Débats*, of this day, thinks, from its direct advices, that the Hungarians must succumb; the *National*—pretending to information of equal authority—thinks otherwise. Enclosed you have the decisive rescript of the emperor. The National Assembly at Frankfort becomes more and more hostile to republicanism and anarchy; the dispositions of the Assembly at Berlin are growing more favorable to the royal cause. On the 8th inst., the new and liberal constitution for Holland was adopted by two thirds of the second chamber, and will be immediately ratified by the first chamber and the king. The astronomical controversy in the Paris Academy of Sciences may be considered as at an end. The *Compte Rendu*, of the sitting of the 2d inst., contains Leverrier's second memoir on the planet Neptune. Those high authorities, Biot, Cauchy, and Faye, sided with him emphatically and entirely; the English luminaries, Herschel, Hind, Graham, do the same; Mr. Maury, the director of the observatory at Washington, was cited in the list of "the eminent auxiliaries who had refuted the paradoxes by which it had been attempted to pervert public opinion on Leverrier's discovery." The scientific reporters of our journals declare M. Babinet to be vanquished. Herschel is preparing a thorough disquisition and final sentence.

From the Examiner, 7th Oct.

AMERICAN PRESIDENTIAL ELECTION.

To all who take an interest in the well-working of American institutions, indirectly to every nation in which liberal principles are struggling to maintain their ground, and directly to ourselves, whose natural desire it is to stand well with the kindred republic, the present aspect of the impending election in America should be far from displeasing or distasteful.

Chancellor Kent called the presidential election the *experimentum crucis* of the republican form of government, and claimed for it, not without strong faith in the discretion, moderation, and integrity of his countrymen, a certain period of probation. The time has not expired, but we cannot say that hitherto its success has offered ground for congratulation. Worse than even the predominance of unreflecting and rabid party spirit has been the ascendancy of trading politicians. Even when a successful rally had been made round a chief like Jackson, who, with all his crotchets and coarseness, had purpose and a manly energy, the fact has been painfully obtrusive that the election was a mere scramble for places. The proscription of all holders of the most insignificant office, who were not members or time-servers of the ascendant faction, and the avowed bestowal of emolument and place as the reward for serviceable canvasses, have placed the mob-courtiers of America on as low a level as the old king-courtiers of France. Every dignity and duty of the state has been lowered to an election bribe, and the highest as well as meanest appointment counted but as payment for past or retainer for future service. The appearance of Mr. Tyler and Mr. Polk in the seat once occupied by Washington, Jefferson, and Madison, seemed really to be almost decisive against any future possible realization of the hopes or faith of Chancellor Kent.

We rejoice to think that matters are mending. The nomination of General Taylor, and the course of his relations with the party of which he is now the declared representative, indicate better prospects in the republican horizon than have been visible for many years. It is yet possible that we may see "discretion, moderation, and integrity," prevail in the choice of the chief magistrate of America. General Taylor is not a trading politician. The qualities he lately displayed in the field, and the judgment with which he kept himself aloof from the extreme party that had obtained his service as a soldier, concentrated public attention and esteem upon him. He is the only man, we believe, since the greater race of American presidents, who so at once united many parties. By democrats and whigs in primary assemblies, in separate and mixed meetings, he seems to have been nominated; these nominations he appears to have accepted, one after the other, without concealing or suppressing the fact that he held the opinions of the whigs; and now that the whigs as a body have named him their candidate, he frankly tells them that he will not be a party president.

We have here the promise of a brave and honorable man, uncontaminated with party madness.

A letter just published by General Taylor to correct some misconceptions that had gone abroad concerning him, confirms our impression of his worth. There is nothing in the letter which indicates genius or imaginative impulse, but it is marked by strong good sense and excellent feeling. Its writer understands and discriminates the position and duties of the chief magistrate of a great republic. He can combine the honest maintenance of his own opinions with constitutional deference to the national will. General Taylor declares that he will not be a candidate in a straitened and sectarian sense. Having no wish to be a partisan president, he refuses to be a party candidate in the sense that would make him one. He does not engage to "lay violent hands indiscriminately upon public officers, good and bad, who may differ in opinion" with himself. He will not force Congress, by the coercion of the veto, "to pass laws to suit him or pass none." Are we not justified in regarding the probable choice of such a ruler as of good omen both for England and America? Public opinion may work itself clear under such auspices, and the better parts of republican government develop and perfect themselves. He may save us at once from the war factions of democracy, and the protectionist divisions of the whigs. We look upon such a presidency, now we hope almost certain, as full of promise for the internal prosperity and happiness of America, and for perpetuation of amicable intercourse between the two great Anglo-Norman nations.

General Cass is the only rival candidate with the shadow of a chance against him. Mr. Van Buren will hardly go to the election, and Mr. Clay has not sanctioned the use of his distinguished name. Mr. Cass is the nominee of the extreme democratic party, and is reported to have secured the ardent support of all the Irish in the Union by his sympathy with the cause of repeal, and by his known determination, in case the rebellion of Ballingarry had succeeded, to have marched forth with into Canada. Mr. Cass duly proclaims these extreme opinions, of course, and makes a long arm across the Atlantic to fraternize with the Flocons and Ledru-Rollins. Yet it may not be amiss to remind his countrymen that it is not six years since this same brawling Mr. Cass wrote a book to disparage the English government and exalt the government of Louis Philippe, in which he branded as a traitor every Frenchman who opposed himself to that despicable system, and offered the most prostrate adulation to the citizen king. This was while the worst of the Orleans' invasions of liberty were in progress; and yet the institution specially singled out for praise by General Cass was that slavish Court of Peers, which was doing precisely the service for Louis Philippe that our Star-Chamber did for Charles the First. The election of this despot democrat, this busy fomentor of the jealousies of nations, would be the most

lamentable mistake yet committed by the extreme faction in America.

The election of General Taylor, on the other hand, will show that as men unquestionably still survive in the United States not unworthy to be named with Washington, Franklin, and Adams, so the large majority of the American people are still able to appreciate and worthy to be served by them.

IRON CARRIAGES.—The tendency of the last few years to substitute iron for wood has been shown in ships, ploughs, and other machines. It has even been attempted in houses; but here, we believe, without that success which is shown in extensive use or practice. A gentleman of the north of Scotland is now experimenting, with good ground of hope, on the introduction of iron carriages. He proposes that the bodies of such vehicles should be formed entirely of an iron frame, the panels of plates of galvanized iron, and the axles of iron tubes filled with wood; the wheels to have for spokes double rods pyramidally arranged, or on what is called the suspension principle. The advantages proposed are—first, a lightness as about two to three; second, a saving of cost in about the same proportion. Thus, a pony-carriage, which, of the usual materials, would weigh five hundred-weight, is only about three when constructed of iron; an omnibus, which, of the ordinary construction, would be twenty to twenty-four hundred-weight, can be formed of iron at about eleven. The same in respect of external decorations and internal comforts. A carriage of this kind effects an important saving in the motive power. If successful as an invention, it must be of no small importance to humanity, both in sparing the muscles of individual horses, and allowing of a greater share of the fruits of the earth being turned to the use of human beings. For use in tropical countries, there is a further advantage in the non-liability to cracking and shrinking, and the unsuitableness of an iron frame for becoming a nest of noxious insects. Apart from the mere substitution of one material for another, which is the leading feature of the invention, much is claimed for it on the ground of the superior springs employed in these carriages. They are spiral, and vertically arranged, working in a case, with an apparatus which precludes their falling from the perpendicular.

We have seen one of Mr. Aitken's carriages, and taken a drive in another, without being able to detect any point in which they are likely to prove a failure. Their success, however, must be matter for larger experiment, requiring time for a satisfactory issue.—*Chambers' Journal*.

HEIGHT OF THE ATMOSPHERE.—Sir John W. Lubbock, according to the hypothesis adopted by him in his *Treatise on the Heat of Vapors*, shows the density and temperature for a given height above the earth's surface. According to that hypothesis, at a height of fifteen miles the temperature is 240° Fahr. below zero; the density is .03573; and the atmosphere ceases altogether at a height of 22.35 miles. M. Biot has verified a calculation of Lambert, who found, from the phenomena of twilight, the altitude of the atmosphere to be about eighteen miles. The condition of the higher regions of the atmosphere, according to the hypothesis adopted by Ivory, is very different, and extends to a much greater height.

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PROSPECTUS.—This work is conducted in the spirit of Littell's Museum of Foreign Literature, (which was favorably received by the public for twenty years,) but as it is twice as large, and appears so often, we not only give spirit and freshness to it by many things which were excluded by a month's delay, but while thus extending our scope and gathering a greater and more attractive variety, are able so to increase the solid and substantial part of our literary, historical, and political harvest, as fully to satisfy the wants of the American reader.

The elaborate and stately Essays of the *Edinburgh Quarterly*, and other Reviews; and *Blackwood's* noble criticisms on Poetry, his keen political Commentaries, highly wrought Tales, and vivid descriptions of rural and mountain Scenery; and the contributions to Literature, History, and Common Life, by the sagacious *Spectator*, the sparkling *Examiner*, the judicious *Athenæum*, the busy and industrious *Literary Gazette*, the sensible and comprehensive *Britannia*, the sober and respectable *Christian Observer*; these are intermixed with the Military and Naval reminiscences of the *United Service*, and with the best articles of the *Dublin University*, *New Monthly*, *Fraser's*, *Tail's*, *Ainsworth's*, *Hood's*, and *Sporting Magazines*, and of *Chambers'* admirable *Journal*. We do not consider it beneath our dignity to borrow wit and wisdom from *Punch*; and, when we think it good enough, make use of the thunder of *The Times*. We shall increase our variety by importations from the continent of Europe, and from the new growth of the British colonies.

The steamship has brought Europe, Asia, and Africa, into our neighborhood; and will greatly multiply our connections, as Merchants, Travellers, and Politicians, with all parts of the world; so that much more than ever it

now becomes every intelligent American to be informed of the condition and changes of foreign countries. And this not only because of their nearer connection with ourselves, but because the nations seem to be hastening, through a rapid process of change, to some new state of things, which the merely political prophet cannot compute or foresee.

Geographical Discoveries, the progress of Colonization, (which is extending over the whole world,) and Voyages and Travels, will be favorite matter for our selections; and, in general, we shall systematically and very fully acquaint our readers with the great department of Foreign affairs, without entirely neglecting our own.

While we aspire to make the *Living Age* desirable to all who wish to keep themselves informed of the rapid progress of the movement—to Statesmen, Divines, Lawyers, and Physicians—to men of business and men of leisure—it is still a stronger object to make it attractive and useful to their Wives and Children. We believe that we can thus do some good in our day and generation; and hope to make the work indispensable in every well-informed family. We say indispensable, because in this day of cheap literature it is not possible to guard against the influx of what is bad in taste and vicious in morals, in any other way than by furnishing a sufficient supply of a healthy character. The mental and moral appetite must be gratified.

We hope that, by "winnowing the wheat from the chaff," by providing abundantly for the imagination, and by a large collection of Biography, Voyages and Travels, History, and more solid matter, we may produce a work which shall be popular, while at the same time it will aspire to raise the standard of public taste.

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A newspaper is "any printed publication, issued in numbers, consisting of not more than two sheets, and published at short, stated intervals of not more than one month, conveying intelligence of passing events."

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WASHINGTON, 27 DEC., 1845.

Of all the Periodical Journals devoted to literature and science which abound in Europe and in this country, this has appeared to me to be the most useful. It contains indeed the exposition only of the current literature of the English language, but this by its immense extent and comprehension includes a portraiture of the human mind in the utmost expansion of the present age.

J. Q. ADAMS.